NEW EQUIPMENT DIGEST

A Penton Publication

January, 1955

Volume 20—Number 1

TECHNOLOGY DEPT.

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Use Inquiry Slips—Pages 16 and 80

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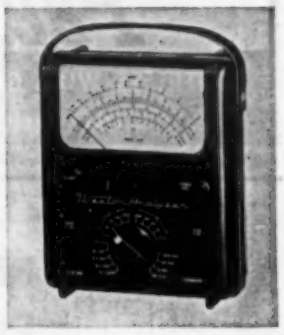
EQUIPMENT • MATERIALS • PROCESSES • DESIGNS • APPLICATIONS • LITERATURE

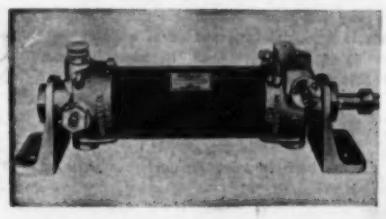
VOLT-OHM-MILLIAMMETER
does a variety of test measurements



A combination of functional ranges that covers a variety of electronic test measurement applications is provided by model 980 volt-ohm-milliammeter. Instrument has direct current sensitivity of 20,000 ohms/volt and an alternating current sensitivity of 1000 ohms/volt. Accuracy is 2 per cent dc and 3 per cent ac. Single dial simplifies switching for range and function. Ranges are 1.6, 8, 40, 160, 400 and 1600 v ac and dc; −15 to +54 decibels (in six ranges); 8, 80 and 800 ma dc; 80 microamperes dc; and 8 amp dc. Ohms range is R x 1 to R x 10,000 which gives center scale of 25 to 250,000 ohms and full scale of 1000 ohms to 10 megohms. Made by **Weston Electrical Instrument Corp.**, 617 Frelinghuysen Ave., Newark 5, N. J.

▲ For more details circle NED-1 A5 on enclosed inquiry slip ▲

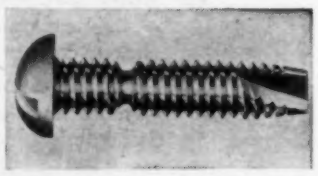
AIR-HYDRAULIC CYLINDER
in any stroke length to 72 in.



Co - axial designed air-hydraulic cylinder provides smoothness and precise control of hydraulic power from any shop air supply. Air cylinder surrounds oil cylinder, and expanding exhaust air helps cool oil to assure dependable operation under continuous rapid cycling and heavy loads. Automatic models are available with built-in controls (remotely operable if desired) of speed or direction, adjustable fast traverse either direction and automatic recycling. Unit develops hydraulic piston thrust of 3.14 times airline pressure and pull of 2.7 times airline pressure. It is available in any stroke length to 72 in. and can be used with standard Modernair cylinder mountings. Made by **Modernair Corp.**, Dept. NED, 400 Preda St., San Leandro, Calif.

▲ For more details circle NED-2 A5 on enclosed inquiry slip ▲

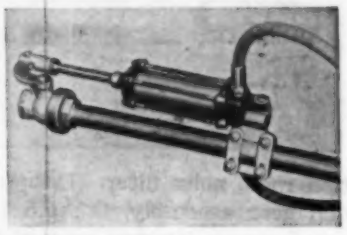
BREAK-OFF SCREW
forms stud in die casting hole



Attachment of a die cast piece to another object is simplified through use of this break-off type thread cutting screw which forms a stud in the cored hole of die castings. Applications include fastening nameplates and decorative escutcheons of various types. Screw can be hopper fed from power screw drivers. It is driven into the untapped hole until it "bottoms," then torque is increased and upper portion, including head, twists off at a "necked down" section. This leaves a protruding stud on which a nut can be threaded. Head portion can be designed for reuse in a different type of application. Samples in No. 8 size are available from manufacturer, **Illinois Tool Works**, Shakeproof Div., 2503 N. Keeler Ave., Chicago 39, Ill.

▲ For more details circle NED-3 A5 on enclosed inquiry slip ▲

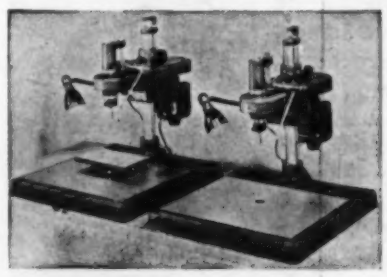
AIR OPERATED BALL VALVE
for elevated or remote locations



Control panels permit convenient operation of many scattered valves through use of this air-operated ball valve. Unit is intended for elevated or remote installation. Valves can be supplied in sizes from ⅜ to 2 in. and afford such advantages as leakproof service, full round flow, quick opening and closing, little maintenance and long service. Complete units or kits to convert conventional Rockwood ball valves to air operation are available. Made by **Rockwood Sprinkler Co.**, 44 Harlow St., Worcester 5, Mass.

▲ For more details circle NED-4 A5 on enclosed inquiry slip ▲

DRILLING MACHINE
large base unit for tool rooms



Holes from 0.004 to 5/16-in. can be drilled in all drillable materials by the Maximus, a large - base tool room drilling machine. Accurately machined base pad measures 21 x 17 in., ample for dies, jigs, fixtures and other tool room parts. Auxiliary demountable work tables for small work can be supplied. Machine drills to center of a 16-in. workpiece. Four spindle speeds are obtained through one drive. Four optional drives provide speeds from 750 to 8750 rpm. Self-contained drilling unit swings radially on the column and locks in any position. Made by **Hamilton Tool Co.**, 901 Hanover St., Hamilton, O.

▲ For more details circle NED-5 A5 on enclosed inquiry slip ▲

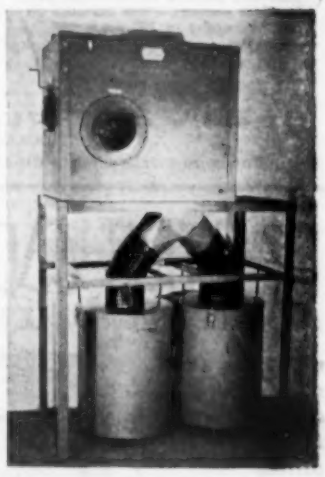
SELF-SEALING GROMMET
it rolls and locks in place

Functioning as pressure seal, parts positioner, vibration dampener or insulator, this Moorhead Roll-Lock grommet is easy to install. As illustrated, it is in-

serted in hole; cable, wire or tubing is inserted through its hollow center for the desired length plus a few inches; and then wire or tube is pulled in reverse direction to cause tapered end to roll inward upon itself. This locks grommet in place and forms a seal against entry of water, air, dust, moisture and chemicals. Grommet can also serve as electrical insulator. Reverse push on wire or tubing unlocks grommet for easy removal. On smooth tubing, seal formed will withstand hydrostatic pressures to 225 psi. By using simple installation tool, grommets are applicable as rubber feet in all types of equipment. Grommets can be molded from standard or special or synthetic rubber compounds in sizes to meet practically all needs. Made by **Stalwart Rubber Co.**, 151 Northfield Rd., Bedford, O.

▲ For more details circle NED-6 A5 on enclosed inquiry slip ▲

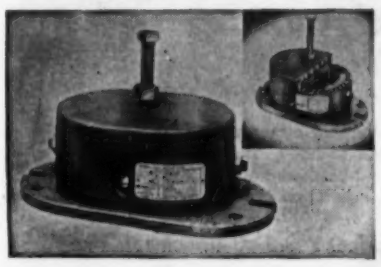
DUST COLLECTING UNIT
redesigned for easy maintenance



Overall height of model 11w50 Dustkop dust collecting unit has been reduced 10 in. by elimination of standard dust bin. Filtered dust, shavings, chips, and lint drop directly into selected collecting roller cans. The roller cans, plus diversion Y have also been redesigned to permit greater capacity and easy maintenance. All-metal diversion Y seals cans, permitting dust to flow freely and to settle quickly. Lid is held in place by three easily operated clamps. Lid and Y connections are self-suspending during roller can removal and dumping operations. Made by **Aget Mfg. Co.**, 1396 E. Church St., Adrian, Mich.

▲ For more details circle NED-7 A5 on enclosed inquiry slip ▲

VIBRATION ISOLATION UNIT
is high deflection spring type



Wide deflection for maximum isolation efficiency is permitted by type SF spring type vibration isolating unit for rotating and reciprocating machinery. Telescopically constructed unit is fully enclosed in semisteel housing and has steel spring mounting with chrome vanadium springs. Resilient guides contained within upper portion of housing are protected from oil drippings, dirt and waste. They afford all-direction snubbing and damping. Units are factory preset, but can be readjusted at any time. Other features include combination adjustment and leveling bolt, lock nut for securing machine base, anchor-bolt slots and auxiliary anchor bolt holes for straddling beam web. Made by **Vibration Mountings, Inc.**, 76-31 Queens Blvd., Elmhurst 73, L. I., N. Y.

▲ For more details circle NED-8 A5 on enclosed inquiry slip ▲

SMALL MOTORS
nine ratings from 1/200 to 1/40 hp

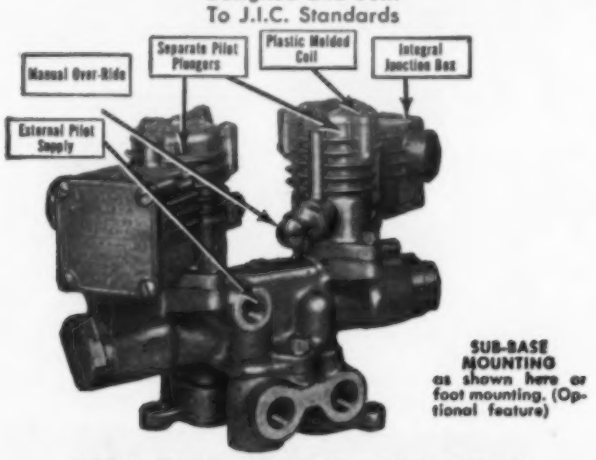
High starting torque and exceptional power output are combined in these Barcol YAF unidirectional motors available in three stack thicknesses and nine power ratings from 1/200 to 1/40-hp. Typical power applications include industrial instruments, fans, small pumps, animated displays, toys and other devices and appliances. Large oil reservoirs, alignable oil-impregnated porous bronze bearings, selection of mounting arrangements and stainless steel hardened and ground shafts are features. Made by **Barber-Colman Co.**, Small Motors Div., Dept. NED, 1200 Rock St., Rockford, Ill.

▲ For more details circle NED-9 A5 on enclosed inquiry slip ▲

New SPEED KING

CONTROL VALVE with DOUBLE SOLENOID

Designed and Built
To J.I.C. Standards



CHECK THESE FEATURES LISTED BELOW

1. LIFE — Performs through millions of cycles without danger of breakdown or coil burn-out.
2. SPEED — Up to 600 cycles per minute for air service.
3. EXTERNAL PILOT SUPPLY — Standard feature for optional use. Used for vacuum — low pressure air and hydraulics to 300 p.s.i.
4. MANUAL OVER-RIDE — (Optional feature) Enables valve to operate without current.
5. SEPARATE PILOT PLUNGERS — For use in actuating in either direction — momentary electrical contact to change valve position.
6. PLASTIC MOLDED COIL — Prevents short circuiting.
7. INTEGRAL JUNCTION BOX — (Optional feature) Has removable cover for ease of wire installation and maintenance.

ASK FOR BULLETIN A12

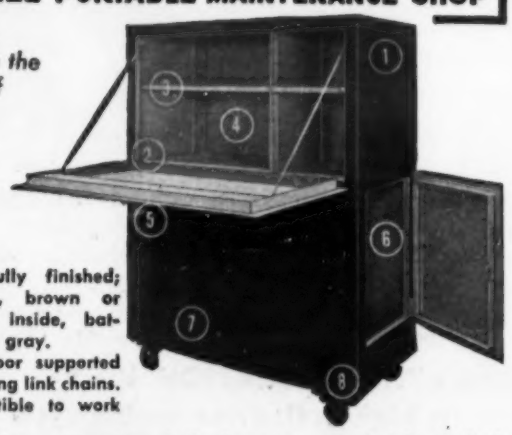
Valvair 947 BEARDSLEY AVE. • AKRON 11, OHIO
Affiliate: Sinclair-Collins Valve Company

▲ For more details circle NED-11 A5 on enclosed inquiry slip ▲

KARI-ALL *Unconditionally Guaranteed!*

ALL STEEL PORTABLE MAINTENANCE SHOP

all orders shipped in the rotation of their arrival



1. Beautifully finished; outside, brown or green; inside, battleship gray.
2. Drop-door supported by strong link chains. Convertible to work bench.
3. Adjustable, removable shelf. Space to any height desired. Extra shelves available.
4. Total storage space: 39 cubic feet. Top part, 17 cubic feet; lower part, 22 cubic feet.
5. Both doors controlled by one lock. One padlock protects all KARI-ALL contents.
6. End door can be installed on either side. It is 18" x 24".
7. Entire cabinet constructed of heavy sheet steel, reinforced with steel angles.
8. Rubber-tired, 4" steel rollers on swivel ball bearings. Rolls easily.

Low introductory price . . . so inquire TODAY!

B. & J. JACOBS Co., Inc. 1731 JOHN STREET CINCINNATI, OHIO

▲ For more details circle NED-12 A5 on enclosed inquiry slip ▲

all working parts on cover of

ADSCO *Dual* STEAM TRAP

Only ADSCO's exclusive features make maintenance so easy. There's no breaking of pipe connections to inspect or service the trap, because all working parts are mounted on the cover. An extra cover assembly becomes a complete spare trap . . . replace the cover in a matter of minutes and service the original when convenient.

ADSCO traps offer additional exclusive advantages: reversible stainless steel valve and seat double the life of the trap . . . inlet and outlet connections on *both* sides make installation easy and less expensive.

Write for Bulletin 35-87-N

AMERICAN DISTRICT STEAM COMPANY, INC.
NORTH TONAWANDA, NEW YORK
PLANTS: NORTH TONAWANDA, N. Y. — RICHMOND, CALIF.

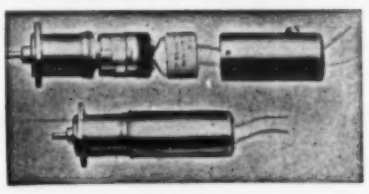
▲ For more details circle NED-13 A5 on enclosed inquiry slip ▲

Visit the Plant Maintenance Show

Plan now to attend the 6th National Plant Maintenance and Engineering Show at the International Amphitheatre, Chicago, January 24 to 27, 1955. More than 400 companies will exhibit equipment and materials that will contribute to economy and efficiency in the operation of industrial plants. An Engineering Conference, led by top plant engineering executives, will be staged concurrently with the show. In case you become foot-weary, there will be comfortable chairs in the NEW EQUIPMENT DIGEST booth, No. 672.

A. N. Gregg
EDITOR

RADIO NOISE FILTER
fits small motor and gear assembly



Attenuation greater than 50 decibels over a range of 150 kc to 1000 mc is featured by this miniature continuous duty, dual section radio noise filter. Designed to fit a small motor and gear assembly, the 1 3/16 x ¾-in. molded unit serves as an integral part of the motor, rather than an external accessory. It operates satisfactorily in ambient temperatures as high as 125° C and exceeds Air Force specification Mil-I-6181-B as applied to small motors. Drilled and tapped molded metal insert simplifies mounting. Made by **Potter Co.,** Dept. NDC, North Chicago, Ill.

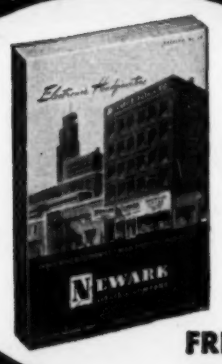
▲ For more details circle NED-14 A5 on enclosed inquiry slip ▲

AIR SYSTEM DRAIN
automatic unit collects oil, water

Designed for installation on receiver tanks, air line sumps, drain legs and storage tanks, model 150SD-4 Sump Drain will automatically collect and discharge moisture, free oil and contaminants from compressed air at pressures from 10 to 250 psi. Made of cast aluminum, drain has capacity of 400 gph of water. It is threaded for ½-in. pipe nipple on inlet. Cellular plastic float snap-actuates the valve to assure fast discharge without loss of air. Made by **Wilkerson Corp.,** 3435 S. Platte River Dr., Englewood, Colo.

▲ For more details circle NED-15 A5 on enclosed inquiry slip ▲

SEE THE LATEST IN
Electronics
EQUIPMENT



FREE

Send for
Newark's 1955 Catalog

Here are the latest releases in tubes, transformers, capacitors, test instruments and everything in electronics parts and equipment. See also the newest developments in Radio, TV and High Fidelity.

NEWARK ELECTRIC COMPANY
Dept. N-1, 223 W. Madison, Chicago 6, Ill.

▲ For more details circle NED-16 A5 on enclosed inquiry slip ▲

It's Yours

THIS NEW 8-PAGE FOLDER on Peerless Formed Wire Product Fabrication

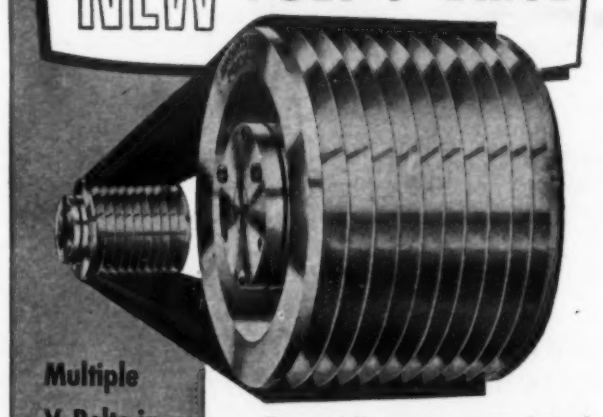
This new 8-page brochure shows the plant facilities for fabrication of Peerless' formed wire products . . . from wire storage room through shipping . . . from the simple forming operations through the most complex welding and assembly.

Peerless has been one of the foremost formed wire product fabricators since 1910. There's plenty to learn about Peerless' formed wire product fabrication from this booklet and . . . it's yours for the asking. *Write today!*

Peerless
PEERLESS WIRE GOODS COMPANY, INC.
2706 FERRY STREET · LAFAYETTE, INDIANA

▲ For more details circle NED-17 A5 on enclosed inquiry slip ▲

NEW BROWNING POLY-V* DRIVE



Multiple V-Belts in a Single Unit

This remarkable new drive consists simply of rows of parallel V-belts molded as a single unit, running on matching sheaves. Its advantages are:
- Save space—narrow sheave faces, small diameters
- Reduce bearing pressures
- No matching of separate V-belts
- Maximum horsepower in minimum space

Ask your Browning distributor or write us for Bulletin 2098.

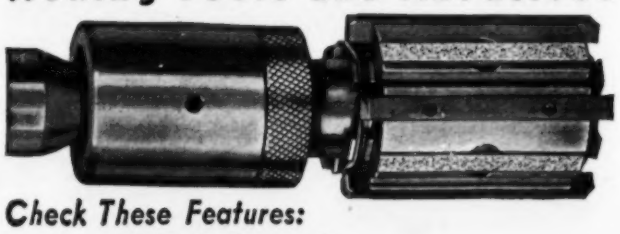
*Raybestos-Manhattan, Inc. registered trademark for its patented Poly-V Drive.

Browning MANUFACTURING COMPANY
MAYSVILLE, KENTUCKY

▲ For more details circle NED-18 A5 on enclosed inquiry slip ▲

BARNESDRIL

Honing Tools and Abrasives



Check These Features:

- ✔ ***Body Support*** — freer cutting action due to support of stone close to cutting edge. Less spalling and wear.
- ✔ ***Greater Stone Life*** — more usable abrasive with Plas-T-Clad Stone design. Reduced downtime for replacement.
- ✔ ***Electronic Feed*** — automatic compensation for stone wear, and maintains proper pressure between stone and work at all times.

Get Complete Data in Catalog 500Y

BARNES DRILL CO.
866 CHESTNUT STREET • ROCKFORD, ILLINOIS

▲ For more details circle NED-19 A5 on enclosed inquiry slip ▲

How to Cut Cleaning Costs with

WASTE RECEPTACLES

IN YOUR PLANT

Everybody is automatically a member of your cleaning department by conveniently placing Bennett Bilt Waste Receptacles to invite their use. These waste receptacles are sanitary, economical and a major help to cleanliness and neatness. Put them to work for you and reduce cleaning costs.

BENNETT

WASTE RECEPTACLES

HAVE ALL THESE FEATURES

- Non-rusting stainless steel feet eliminate rusting and rust marks
- Made of extra heavy-gauge corrosion resistant steel
- All welded construction
- Smooth exterior surface . . . nothing to catch and tear clothes
- Reinforced corners
- Self-closing mechanism assures closed doors when not in use and permits easy opening of independent doors with finger-tip pressure
- Rounded corners for structural strength and pleasing appearance
- Baked enamel finish . . . white or green

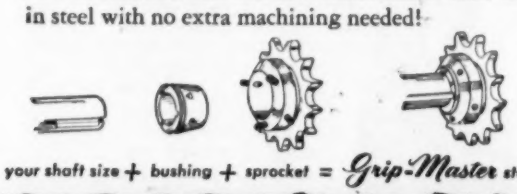
• These are a few of the many features that make Bennett Bilt Waste Receptacles a natural "buy".

THE BENNETT MANUFACTURING COMPANY
ALDEN, N. Y.

▲ For more details circle **NED-20 A5** on enclosed inquiry slip ▲

answer to better low-cost power transmission

Write today for the first really Engineered approach to the problem of supplying custom sprockets "off-the-shelf". Low installation cost and low maintenance cost. All sizes in steel with no extra machining needed!



your shaft size + bushing + sprocket = Grip-Master stock delivery

cullman
POWER TRANSMISSION
ROLLER CHAINS AND SPROCKETS
REPRESENTATIVES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES
CULLMAN WHEEL COMPANY, 1333 ALTGELD ST., CHICAGO 14, ILLINOIS

▲ For more details circle **NED-21 A5** on enclosed inquiry slip ▲

GENERAL CONTROL FOOT SWITCHES

FOOTROL GENERAL CONTROL — FOOT SWITCHES are the recognized leaders . . . for dependable, fast, efficient control of industrial operations.

Type MI FOOT SWITCH

An ideal treadle-type switch, especially convenient for numerous applications.

Inclined non-slip tread has adjustable throw and includes a heel rest. 2 operating pressures: standard 5 lbs. and 10 lbs. when specified. A BX connector is mounted in the base, and terminal access is by a removable base plate. Mounting ears each side.

FOUR STYLES to meet every need:

MA MC MI MB

USE THIS CHART TO ORDER THE EXACT TYPE YOU NEED

TYPES				CONTACT TYPES	CONTACT OPERATION
MA-3 $5.00	MC-13 $6.50	MI-23 $9.80	MB-33 $13.65	C	Double throw Spring return (ONE NORMALLY OPEN, ONE NORMALLY CLOSED)
—	—	MI-25 $11.25	MB-35 $16.25	ACO-C	First press transfers switch contacts Second press restores switch contacts (ONE NORMALLY OPEN, ONE NORMALLY CLOSED)
—	—	MI-26 $13.65	—	TS-AA	1st half-throw closes 1st switch 2nd half-throw closes 2nd switch Spring Return
—	—	MI-27 $15.00	—	2-C	Double pole Double throw Spring return (TWO NORMALLY OPEN, TWO NORMALLY CLOSED)

Add $2.50 to price shown, for foot switch with heavy duty 20-ampere rating.
Add $1.65 to price shown, for foot switch with direct current rating.

Write for Bulletin NED-200

GENERAL CONTROL COMPANY
1200 Soldiers Field Road (Est. 1934) Boston 34, Mass.

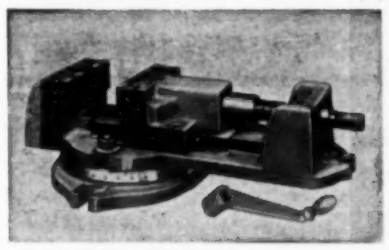
▲ For more details circle **NED-22 A5** on enclosed inquiry slip ▲

VACUUM CUP LIFT
speeds handling of flat materials

Flat, nonporous materials such as sheet metal, plate glass, TV tubes, refrigerator and range housings, stampings, castings and boxes are efficiently handled by the Vac-Lift. Unit is made up of the Air-Bloc hoist, the easy-to-operate Pendent throttle and vacuum cup. Air that operates hoist creates required vacuum. Load is also released by air. By merely placing cup on work, a safety-tight seal is created. Easy one-hand operation allows accurate spotting of load which is released by finger-tip control. Made by **Ingersoll-Rand Co.**, News Service Dept., Phillipsburg, N. J.

▲ For more details circle **NED-23 A5** on enclosed inquiry slip ▲

HEAVY DUTY MACHINE VISE
6-in. stationary and swivel models



Precision, sturdiness and large opening capacity are features of this 6-in. heavy duty machine vise. Maximum opening is 6¼ in. Vises are available in illustrated graduated swivel base model or with a stationary flanged base. Made by **Wilton Tool Mfg. Co.**, Dept. NED, 925 Wrightwood Ave., Chicago 14, Ill.

▲ For more details circle **NED-24 A5** on enclosed inquiry slip ▲

WIRING EYELET
forms solderless wire terminal

This Crown Crimp eyelet has been added to the A-MP line of solderless wire terminations. It affords fast application and easy handling because it is supplied in strip form for application with automatic machines at speeds up to 2000 per hour. Crimped eyelets have even distribution of wire strands and afford ample tensile strength without solder. Made by **Aircraft-Marine Products, Inc.**, 2100 Paxton St., Harrisburg, Pa.

▲ For more details circle **NED-25 A5** on enclosed inquiry slip ▲

For quickly and easily pulling bearings, bushings, and liners on electric motors

. . . use the Duff-Norton remote controlled "Lo-Hite" Hydraulic Jack with detached independent pump. The ram when closed is only 4½ inches high, yet can safely move 30 tons 2 inches in any direction. The independent pumping mechanism is connected to the jacking ram by an 8-foot flexible rubber hose. Safe, sturdy, precision-built for trouble-free service, the "Lo-Hite" is winning new users everywhere.

Ask your local distributor for the "Lo-Hite" (No. 30-H-4.5), or write the world's oldest and largest manufacturer of lifting jacks for Bulletin AD-32-N and name of the nearest distributor—The Duff-Norton Manufacturing Company, P. O. Box 1889, Pittsburgh 30, Pa. Canadian plant—Toronto 6, Ontario.

DUFF-NORTON JACKS

▲ For more details circle **NED-26 A5** on enclosed inquiry slip ▲

Etch Iron, Steel or Their Alloys

IDEAL *Electric* ETCHERS

More reliable than tags, far cheaper than special plates. Portable—safe—fast! Repays low cost dozens of times over in time and money saved. "Universal" Model (shown) has 4 etch heats —120 to 700 watts. Other sizes for all sizes of work.

SOLD THROUGH LEADING DISTRIBUTORS

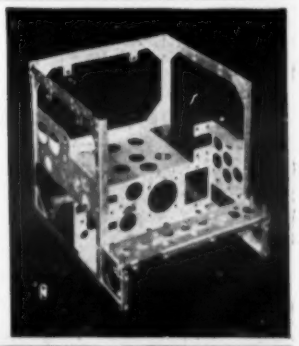
Burn a Permanent Mark for
Model Nos.
Hardness Tests
Inventory Data
Gauge of Metal Identifying Tools, Jigs, Dies
Parts Nos.
Sizes
Dozens of Uses

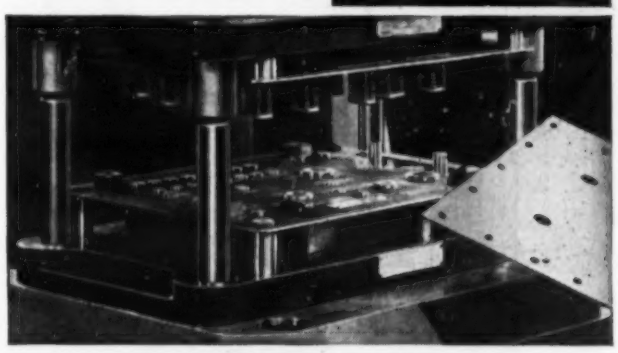
TRY IT OUT!

IDEAL INDUSTRIES, Inc.
1032 Park Ave., Sycamore, Illinois
Please send catalog data and arrange free demonstration on IDEAL etcher.
NAME_____
COMPANY_____
ADDRESS_____
CITY_____ ZONE____ STATE_____

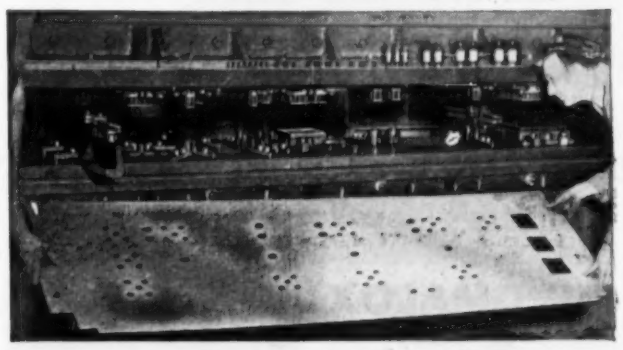
▲ For more details circle **NED-27 A5** on enclosed inquiry slip ▲

OVER 2,000 PLANTS
are making up their Metal Perforating Die Sets by Whistler methods





WHISTLER MAGNETIC PERFORATING DIES



WHISTLER ADJUSTABLE PERFORATING DIES

- Lower die-making costs.
- Start production quicker.
- Save work handling labor.
- Increase press production.
- Versatile in job application.
- Perforate materials to ¼" thick mild steel.
- Combine horizontal and vertical perforating operations.
- Work in practically any size or type of press.
- All parts re-usable and interchangeable.
- Precision assured on short or long runs.
- Parts interchangeable right in the press.
- Magnetic dies assembled on templates.
- Adjustable dies assembled on Tee slot die sets.
- Save floor and storage space.
- Die investment not "tied up."

WHISTLER DIES ARE CUTTING COSTS FROM COAST TO COAST

SEE FOR YOURSELF
Without Obligation

Our *illustrated* Catalogs show the simplicity, economy and versatility of Whistler methods. See for yourself why Whistler customers are the biggest names in industry.

S.B. WHISTLER & SONS, INC.
750 Military Road Buffalo 23, New York

▲ For more details circle **NED-28 A5** on enclosed inquiry slip ▲

4-OZ. Pencil Soldering Iron Delivers 1000° Tip Temperature

NOW, *more than ever before...* —yet only 47½ watts...

Ungar

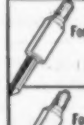
does a BETTER *job with*

SUPER HI-HEAT SOLDERING TIPS

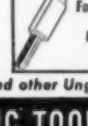
For production line soldering and extra heavy duty service!

Here in this famed, featherlight, pencil-slim tool is everything you expect from big 100-150 watt irons—except the excess weight, cumbersome bulk and maintenance chores which result in slow-down fatigue and increased costs. Thread a SUPER HI-HEAT TIP into the famed UNGAR HANDLE for a searing 850 to 1000 degrees of tip temperature and discover an ease of handling, speed and efficiency never before possible. 4 interchangeable tips only 47½ watts each—precision machined of Tellurium Copper, processed with special iron plating to eliminate need for grinding, filing and other maintenance problems. Handle and all tips (UL) listed.

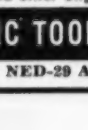
Super Hi-Heat Chisel Tip #4033
For production lines, service, repair, AN connectors. 1⅜" long, ¼" wide tip. Copper base plated with iron & silver. 900° F. 47½ W., 115 V. AC-DC.



Super Hi-Heat Heavy Chisel Tip #4039
For extremely heavy production service. Iron plating over copper base, coated with silver, needs no filing or grinding. ⅜" dia., 1⅛" long, 47½ W., 1000° F. 115 V., AC-DC.



Super Hi-Heat Pyramid Tip #4036
For extra duty soldering, heavy wire-wrapped joints, etc. ⅜" dia., 1⅛" long. Iron plating over copper, coated with silver. 1000° F., 47½ W., 115 V., AC-DC.



Super Hi-Heat Threaded Unit #4035
For use with special Elkaloy A interchangeable tiplets. Designed for resistor wiring, germanium diodes, AN connectors. 47½ W., 115 V. AC-DC, 850° F. Iron base chrome plated for corrosion resistance. ⅜" dia.

For information on these and other Ungar Tips, write for Catalog B

Ungar ELECTRIC TOOLS, INC. P.O. BOX 312, VENICE, CALIFORNIA

▲ For more details circle NED-29 A5 on enclosed inquiry slip ▲

NEW EQUIPMENT DIGEST

BPA NBP

EQUIPMENT • MATERIALS • PROCESSES • DESIGNS • APPLICATIONS • LITERATURE

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New Equipment Digest is published monthly by The Penton Publishing Co., Penton Building, Cleveland 13, Ohio. G. O. Hays, President & Treasurer; R. C. Jaenke, Executive Vice President; F. G. Steinebach, Vice President & Secretary; F. O. Rice, Vice President; J. P. Lipka, Asst. Secy. & Asst. Treas. Also Publisher of Steel, Foundry, Machine Design and Automation. Accepted As Controlled Circulation Publication at Cleveland, Ohio.

Publisher's Notice: We assume no responsibility for the validity of claims in connection with news items appearing in New Equipment Digest. Addresses are given to facilitate further inquiry.

TIERED STORAGE RACK feeds contents in rotation

Up to 30 case fronts are made accessible for order picking and other operations calling for dispensing of parts, cans, small boxes, etc., in a 7-ft section of the Rak-A-Tier Pick-A-Case. Storage system has inclined runners which are adjustable at both picking and feeding ends set on adjustable stringers, making the unit adaptable to cases of varied sizes. All feeding is done from the rear and picking is from the front, thereby moving stock in rotation. As a case is removed from the picking side, another replaces it, being fed by gravity. End frames are so engineered that pallet rack stringers can be jointed directly to the Pick-A-Case and adjusted to any desired level. Attachment of a 4-in. channel converts upper reaches of the rack into dead storage area for palletized items. Made by **Artco Corp.**, 1110 Bethlehem Pike, Flourtown, Pa.

▲ For more details circle NED-32 A5 on enclosed inquiry slip ▲

Free! New CATALOGUE

Showing 750 Different CABINET COMBINATIONS
A Type and Size for Every Need!

In our CATALOGUE, you'll find the perfect CABINET for your particular requirement, whether it be for small parts storage, handling or display. 750 different combinations can be CUSTOM-BUILT at production line prices.

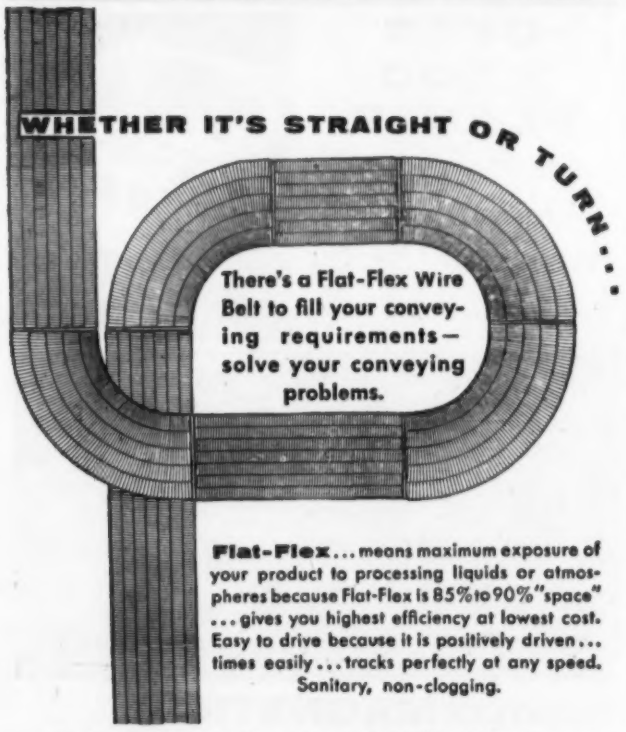
2.98 and up

Send for CAT. JD-53-E

AKRO-MILS, INC. Box 989-E AKRON 9, OHIO

▲ For more details circle NED-34 A5 on enclosed inquiry slip ▲

WHETHER IT'S STRAIGHT OR TURN...



Flat-Flex... means maximum exposure of your product to processing liquids or atmospheres because Flat-Flex is 85% to 90% "space" ... gives you highest efficiency at lowest cost. Easy to drive because it is positively driven... times easily... tracks perfectly at any speed. Sanitary, non-clogging.

Our newly developed Flex-i-Turn, with a 16" inside radius, now makes possible a complete, compact installation of Flat-Flex Wire Belt on any production line.

Available in widths and meshes to fit your requirements. Write:

WIRE BELT COMPANY OF AMERICA
DEPARTMENT #52-3.
750 MAIN STREET, CAMBRIDGE, MASSACHUSETTS

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DRILL CONCRETE

EASIER! FASTER! BETTER!

RCD Drill Bit for use with rotary electric or air drills

Drills perfect, precision holes even in *reinforced* concrete. Super fast and easy (6" deep hole in 1 minute!) Pays for itself in time-savings. Made to last.

Widely used for the past five years by most of the largest U. S. corporations, manufacturers, and utilities, as well as thousands of smaller firms, installation men, contractors, electricians, plumbers, etc. Superior concrete drilling **plus longer drill bit life due to FREE factory resharpening service** keeps them sold.

Personalized guarantee given to every RCD Drill Bit user
If dealer cannot supply (or service), buy direct.

Send for illustrated literature and price list

ROTARY CONCRETE DRILL CO.
650 S. Arroyo Parkway, Pasadena 1, Calif.

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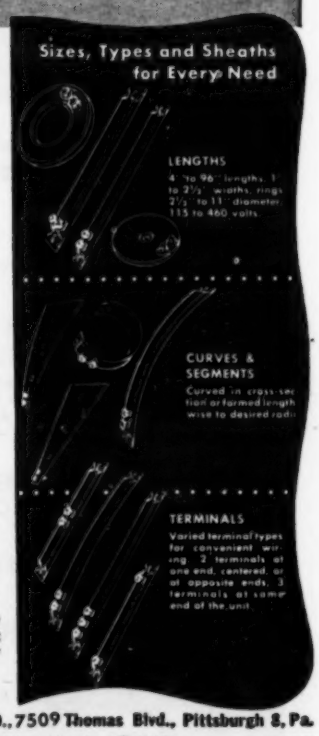
Industry's Most Versatile Heat Source

CHROMALOX *Electric* **Strip Heaters**



EASY TO INSTALL Chromalox Strip Heaters give dependable, accurately controlled heat where and when heat is needed. They produce uniform and exact temperatures by automatic or manual controls. Low initial installation and operating costs are among their many advantages. Get details now about Chromalox Heaters for heating liquids, gases, platens, molds, moving parts, etc.

Write for Catalog 50

It describes many Chromalox Electric Heaters and tells how to apply them.

Industrial Div., EDWIN L. WIEGAND CO., 7509 Thomas Blvd., Pittsburgh 8, Pa.

See other Ad on pg. 75 — **CHROMALOX** — A-4408

ELECTRIC HEAT FOR MODERN INDUSTRY

▲ For more details circle NED-31 A5 on enclosed inquiry slip ▲

ALUMINUM Conveyors

—have many advantages: *Light weight, easy-to-handle, easy to assemble.* Ideal where portable conveyors are desired.
Aluminum ROLLER Conveyor, available in several roll sizes, in lengths and roll spacing as required. Stock materials and parts permit quick shipment on made-to-order basis.
Aluminum WHEEL Conveyor, carried in stock complete for immediate shipment. In 12" or 18" widths with 10 wheels per foot.
Write for further information.

Logan Conveyors

LOGAN CO., 215 CABEL ST., LOUISVILLE, KY.

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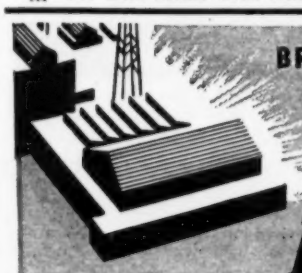


BRUSH OR SPRAY A LIQUID METAL SHIELD WITH THE UNIQUE

Karnak®

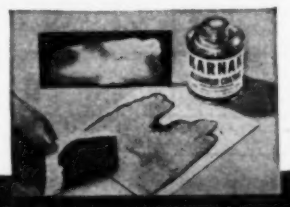
Aluminum Asphalt coating

Gives superior protection because aluminum particles "leaf" as the asphalt base dries forming a firm metallic shield that resists weather and reflects the hot destructive sun rays.

Reduce maintenance costs . . . one coat, low cost, long life protection. One gallon covers above 250 square feet. Applies easily either brush or spray . . . ready to use, just stir in the container.

High quality formulation of Karnak Asphalt Aluminum Coating is certified by the Warranty Seal which is attached to every container. This composition of asphalt aluminum flakes and proper solvent provides the utmost in reflectivity for heat reduction and protective qualities against the destructive elements of the weather. This makes Karnak superior for roofs, metal surfaces, brick and masonry, storage tanks, tank cars, refrigerated buildings and trucks. Manufactured by the Lewis Asphalt Engineering Corporation, 30 Church Street, New York 7, N. Y.

Write for the two-minute test. Shows how the asphalt penetrates and the aluminum flakes form an opaque metallic shield that reflects and protects.



© L.A.E. Corp.

Call for **Karnak** there is no better

▲ For more details circle NED-36 A5 on enclosed inquiry slip ▲

NOW! Self-Oiling GUIDE PIN BUSHINGS OF POWDERED ALLOY STEEL

The above cutaway view clearly shows how oil automatically impregnates the powdered metal to lubricate friction surfaces.

Here's an entirely new concept in guide pin bushings—made of heat treated powdered alloy steel, each bushing has filled internal oil wells. Lubrication to friction surfaces is automatic and no external oiling is required throughout the long life of the bushings.

Wear characteristics of these bushings are comparable to that obtained with finest bronze bushings. In addition, this new R-B design greatly reduces guide pin wear and the possibility of seizing or galling. Self-oiling, less guide pin wear and longer life add up to minimum maintenance, reduced costs and maximum usage of press time. 4117A

RICHARD BROTHERS PUNCH DIVISION
ALLIED PRODUCTS CORPORATION
DEPT. 79 • 12629 BURT ROAD • DETROIT 23, MICHIGAN

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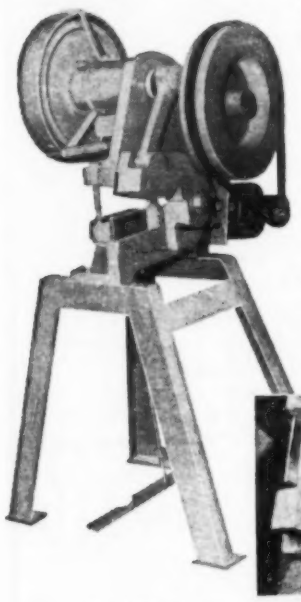
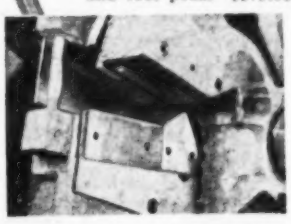
Bateman Angle & Flat Iron Shear

IDEAL FOR THE USERS OF SMALL ANGLES OR FLATS



- No grinding necessary after cut.
- Cut angles up to 2"x2"x3/16" and flats up to ¼"x4".
- Flywheel with gear drive for power with a small motor.
- A one stroke cycle clutch operated by either hand or foot.
- With clutch open, will make 44 strokes per minute.
- Made of high grade cast iron, hardened clutch and clutch pin, shear steel blades.
- Blades can easily be replaced by taking out several screws.
- From floor to top of machine—56" with stand. Floor to shear blade—36". Floor space required —24"x27".
- THIS MACHINE GUARANTEED FOR WORKMANSHIP AND DURABILITY.
- Price of shear, without stand or foot pedal—$350.00. With motor and switch—$450.00. With stand and foot pedal—$375.00.



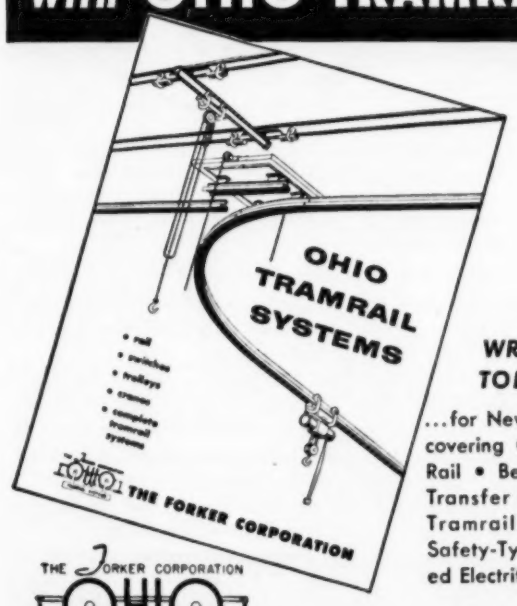
¾ HP. motor required for power. We furnish 2-groove motor pulley and 2-belts when ordered without motor.

Shipping weight approx. 485-lbs., without stand, 560-lbs. with stand.

BATEMAN FOUNDRY & MACHINE CO.
MINERAL WELLS, TEXAS

▲ For more details circle NED-38 A5 on enclosed inquiry slip ▲

See why... IT PAYS TO GO OVERHEAD with OHIO TRAMRAIL



WRITE TODAY

...for New Catalog covering Ohio Tee-Rail • Beam Rail • Transfer Bridges • Tramrail Cranes • Safety-Type Shielded Electrification.

THE FORKER CORPORATION
OHIO
TRAMRAIL SYSTEMS

THE FORKER CORPORATION
2044 RANDOM ROAD CLEVELAND 6, OHIO

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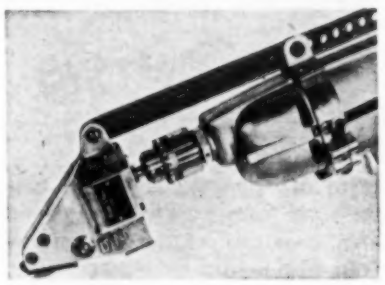
UNIVERSAL MACHINIST VISE
adjustable to any working position

Three sets of jaws, two plain and one equipped with pivot pins, are located at 120-degree positions around head of this Uni-Machinist vise. Jaws are usable independently or in combination for fitting and filing; for round or finished work; for gripping rings, segments, hollow parts, irregular shapes, tapers, rounds and squares, as well as small metal rods and cylinders. Vise adjusts and locks with jaws in practically any working position. Maximum grip is 8 in. Three and 4-in. jaw vises have rated grip of 5 and 6 in. Double lead clamping screw assures firm holding action. Made by **Emmert Mfg. Co.**, Dept. N, W. Main St., Waynesboro, Pa.

▲ For more details circle NED-40 A5 on enclosed inquiry slip ▲

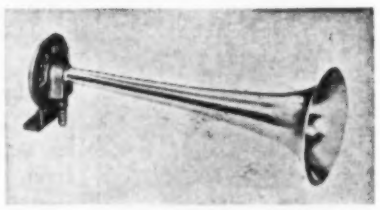
SHEARING ATTACHMENT
for ¼-in. electric drills



Rapid, accurate cutting of any sheet metal up to 16 gage, plastic laminated materials and floor coverings is possible with the Draco-Shear attachment for use with any ¼-in. electric hand drill. It cuts clean, leaving no burrs and does not deform parts. Attachment makes curved and angle cuts in sheet metal and can be started from a 5/16-in. hole. Cutting blades are easily resharpened. Distributed by **Ger-Am Imports**, 9450 S. Vanderpoel Ave., Chicago 20, Ill.

▲ For more details circle NED-41 A5 on enclosed inquiry slip ▲

AIR HORNS
for factories, plant vehicles



Air tank or compressor is not required to operate Buell air horns, used as safety signals for trucks, plant vehicles and lift trucks and in factories and mills of various types. Musical warning note can be heard above all operating noises, including heavy machinery. Spun brass instrument bells are 15 in. overall, with 5½-in. diameter. Horns are chrome plated or prime coated for further finishing. Made by **Buell Mfg. Co.**, Dept. S, 919 W. 49th Pl., Chicago 9, Ill.

▲ For more details circle NED-42 A5 on enclosed inquiry slip ▲

Save Costly Regrinding!

Anderson
NEW, IMPROVED HAND SCRAPER

After the original regrinding most users of this new Anderson hand scraper find that only honing is necessary. Judge for yourself: Order as many Model 5-D scrapers as you want. We'll send them promptly. Use them a full week . . . if they don't live up to all your expectations, send them back to us for refund.

Faster Cutting	with high speed steel blades...$5.80
Easier to use	
Just the Right Spring	with carbide-tipped blades..$8.50
Palm Fitting Grip	
Light in Weight	for rubber bumper shown below..$1.50
18"-20"-22" Lengths	

ORDER AS MANY AS YOU NEED — MONEY BACK GUARANTEE

Indicate choice of high-speed steel or carbide-tipped blades, and 18", 20", or 22" lengths. We suggest you include rubber bumpers in your order. Write today!

ANDERSON BROS. MFG. CO.
1907 Kishwaukee St. • Rockford, Ill.

▲ For more details circle NED-43 A5 on enclosed inquiry slip ▲

SAVE TIME APPLYING LIQUIDS —

Put touch-up enamel, sealing dope, layout blue, red lead and similar liquids or pastes in easy-to-use, leakproof Ellisco Brush Top Cans. THEY SAVE TIME because brush fastened to can makes application easy. THEY PREVENT WASTE because brush size is ideal for applying a minimum amount of liquid and "brush top" screws right back on can to keep from drying out. THEY INCREASE EFFICIENCY and Maintenance and Service men like the convenience of these cans.

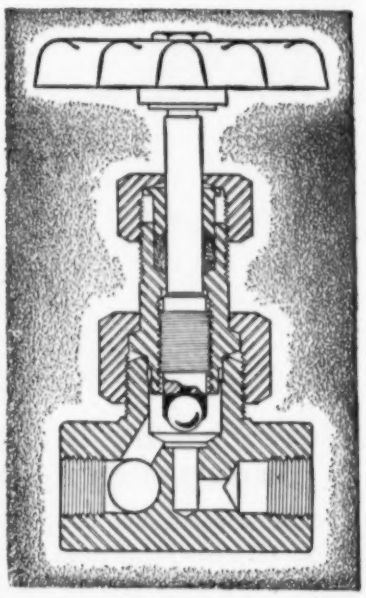
Two styles are available: D Style with high-grade brushes soldered to caps and containing either a ring handle or detachable wood handle; HO Style with smaller acid swab type brushes riveted to screw caps. Size range: ⅛ pint to 1 quart. All sizes available from stock in any quantity.

Write—wire—phone for information and prices.

Ellisco REG. U. S. PAT. OFF.
GEO. D. ELLIS & SONS, INC.
American & Luzerne Sts.
Philadelphia 40, Pa.
BAldwin 3-3405

▲ For more details circle NED-44 A5 on enclosed inquiry slip ▲

NEW! BALL VALVE
for liquids, gas or steam



Here's a radically-new forged steel valve for general heavy industrial use. Can't leak . . . practically never wears out . . . costs little or no more than ordinary valves!

In place of a disc or plug, the new Foxboro Ball Valve has a retained, free-rolling stainless steel ball that exposes new surface to seat at every closing.

Foxboro Ball Valves handle pressures to 3000 psi. Available in straight-thru and angle types. Two or four connections to simplify piping. ¼" size. Write for detailed folder. **The Foxboro Company, 661 Neponset Avenue, Foxboro, Mass., U.S.A.**

FOXBORO INSTRUMENTATION
REG. U. S. PAT. OFF.

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ADAMS creates a Cyclone to give you Drier Compressed Air

The Adams Aftercooler and Cyclone Separator are a perfect team. The highly efficient aftercooler condenses more moisture . . . the separator's unique design creates a cyclone to remove more of the condensation.

Write today for all the facts... Get your copy of Bulletin 177.

R. P. ADAMS CO., INC. 227 E. PARK DRIVE BUFFALO 17, N. Y.

▲ For more details circle NED-46 A5 on enclosed inquiry slip ▲

Your choice of two types:

TYPE U.A.—first liquid-tight flexible wiring conduit to get Underwriters' Approval for use in wet spots.

TYPE E.F.†—extra-flexible, liquid-tight electrical wiring conduit for use on machine tools and industrial equipment. Meets J.I.C. requirements. Available in machine tool light gray at no extra cost.

See for yourself why Sealtite* installations are more permanent, easier and cheaper to make. Send for your FREE sample today. (Specify Type U.A. or Type E.F.) Write: The American Brass Company, American Metal Hose Branch, Waterbury 20, Conn.

*Trade Mark (†Pat. Applied For.) 54180

SEALTITE flexible, liquid-tight electrical conduit—an **ANACONDA®** product

▲ For more details circle **NED-49 A5** on enclosed inquiry slip ▲

Powered by the press ram... independent of the die

1. **CHOPS** *steel* up to 3" wide, ¼" thick.
2. **FITS** any punch press . . . easy to install.
3. **CUTS DOWNTIME** . . . *high speed steel* blades installed in a moment.
4. **SAVES HANDLING SCRAP** . . . scrap falls into collection barrel.
5. **SAVES MONEY** . . . low purchase price, no operating cost.

Write today for full details

JACO DEVICES, INC.
95 HIGH STREET • HINGHAM, MASS.

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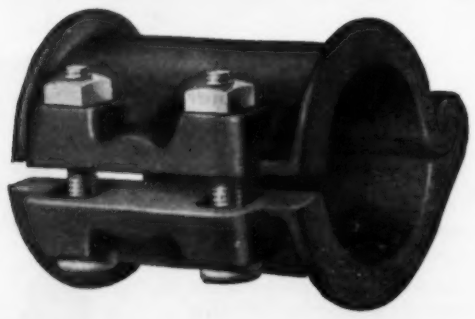
SKINNER-SEAL EMERGENCY PIPE CLAMPS

For Stopping Leaks in Pipe Lines



An instant, permanent repair under any operating condition. No pressure too high. Anyone can apply in a few moments. Made in all sizes, ½" to 12", for steel and C.I. pipe. Stocked by practically all supply stores.

M. B. SKINNER CO., SOUTH BEND 21, IND.

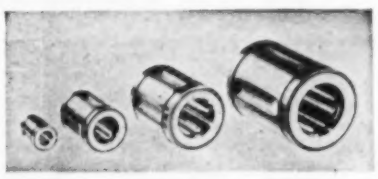
▲ For more details circle **NED-51 A5** on enclosed inquiry slip ▲

QUARTZ THERMOSTAT
controls corrosive liquids, gases

Snap-action quartz thermostats for controlling temperature of corrosive liquids and gases provide high capacity and are practical when space is limited. Units consist of outer chemically resistant quartz tube containing a liquid which actuates contact mechanism by expansion and contraction resulting from temperature changes. They are rated 5000 w at 120-240 v. Operating temperature range can be adjusted by a dial. Thermostat tube is offered in 6 to 36-in. lengths. Made by **N. J. Thermex Co.**, 533 Bergen St., Harrison, N. J.

▲ For more details circle **NED-52 A5** on enclosed inquiry slip ▲

LINEAR BEARING
made of stainless steel



Shaft diameters of ¼, ½, ¾, 1, 1½, 2, 2½ and 3 in. can be fitted with stainless steel Ball Bushings for linear motion in corrosive liquids or atmospheres. Capable of dry operation at slow and moderate speeds, units have same basic dimensions as chrome steel Series A bearings. Low friction coefficient of 0.002 to 0.004 practically eliminates wear. Made by **Thomson Industries, Inc.**, 1035 Plandome Rd., Manhasset, N. Y.

▲ For more details circle **NED-53 A5** on enclosed inquiry slip ▲

MAGNETIC HAND TOOL
picks up small metal parts or scrap

Small ferrous metal parts, nails, screws or scrap can be picked up and easily handled by series 70 Magnetool, consisting of heavy-duty permanent magnet, manual-control lever and hand grip. Tool can be used to separate steel particles from food, textiles and chemicals; to transfer extremely hot or cold parts; and to facilitate handling of unsorted bulk parts. Capacities of three available models range from 3 to 9 lb. Made by **Multifinish Mfg. Co.**, Magnetool Div., Dept. NED, 26341 W. Eight Mile Rd., Detroit 19, Mich.

▲ For more details circle **NED-54 A5** on enclosed inquiry slip ▲

***Specify* AIRMATIC QUALITY FOR:**

1. ***FLOW CONTROL VALVES***
2. ***SEQUENCE VALVES***
3. ***PRESSURE REGULATORS***
4. ***CYLINDERS***
5. ***SOLENOID VALVES***

Write for Complete Details about AIRMATIC Products

Attractive O.E.M. and Quantity Discounts — Delivery from Stock —Immediate

AIRMATIC VALVE, INC.
7317 Associate Ave. • Cleveland 9, Ohio

▲ For more details circle **NED-55 A5** on enclosed inquiry slip ▲

PROTECTION
Against Overloads & "Shorts"

ECON®
DUAL-ELEMENT cartridge fuses

Eighteen strategically located district offices assure electrical wholesalers and fuse users of Economy's complete readiness to solve circuit protection problems.

ECON Dual-Element Fuses, in addition to providing dependable motor and branch line protection, are an effective guard against high temperatures and resulting hazards. In knife and ferrule types, 0 to 600 amperes, 250 and 600 volts. Underwriters' Laboratories, Inc. approved. Write for New Econ Catalog S-60 or for literature on other type fuses.

Your Electrical Wholesaler has ECON Dual-Element Cartridge Fuses in stock

ECONOMY fuses for every purpose

ECONOMY FUSE & MANUFACTURING CO.
2717 GREENVIEW AVE. • CHICAGO 14, ILLINOIS

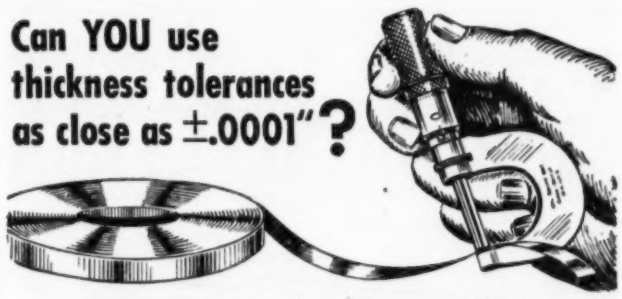
▲ For more details circle **NED-56 A5** on enclosed inquiry slip ▲

Let us show you How/PHONE or WRITE

ALLEGHENY STEEL BAND COMPANY
BOX 716, PITTSBURGH 30, PA. • WAlnut 1-7100

▲ For more details circle **NED-57 A5** on enclosed inquiry slip ▲

Can YOU use thickness tolerances as close as ±.0001"?



ALL TYPES of metals — ferrous, non-ferrous, precious—are readily available from American Silver Company, Inc., rolled to precision tolerances and in thin gauge strips and foils. One pound or thousands!

Among the many ASC precision-rolled metals . . .

BERYLLIUM COPPER. Combines high conductivity, high strength, corrosion resistance, ease of forming and age hardening properties.

On highly specialized equipment, American Silver produces beryllium copper in gauges down to .0005", with tolerances as close as ±.0001", widths to 6". It is used by leading manufacturers in fabricating electrical contacts, springs, bellows and diaphragms.

Do YOU have a job for precision rolled beryllium copper? Ask for Technical Data Sheet #300.

Industrial Metals Division
AMERICAN SILVER COMPANY, Inc.
36-08 Prince Street, Flushing 54, N. Y.

▲ For more details circle **NED-58 A5** on enclosed inquiry slip ▲

CONCENTRATED STRIPPER!

DUNKIT Easily Removes Carbon, Rubber, Paint, Tar, Gum, Plastic, Oxidized Oils, etc.

JUST DIP AND RINSE

Above photo shows how thoroughly DUNKIT strips a heavy, protective asphalt coating. DUNKIT works as effectively on almost every type of paint and soil. Easy to use, just dip parts into DUNKIT, allow to soak until film or soil is softened or falls off, then pressure rinse with water. DUNKIT retains stripping strength even after prolonged use. It's quick, easy, economical to use!

Old-fashioned strippers are composed of 20% water seal and only 80% active ingredients. DUNKIT is 100% pure stripper—you add your own water seal (right from a water tap) and save money! Regardless of price, economical DUNKIT out-performs any stripper on the market. DUNKIT is absolutely non-flammable, non-explosive; it is safe for use on all metals, including aluminum, zinc and copper. Use DUNKIT for stripping stubborn soils from machine parts, fuel oil burners, heat exchangers, small tools, paint guns, as well as automotive, aircraft and railroad engines, etc. Ideal for cleaning pipe lines and descaling integral fuel tanks. Careful laboratory production supervision guarantees "Quality Control".

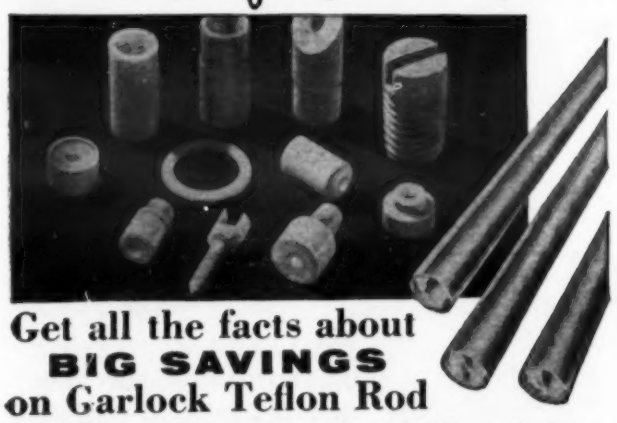
SEND FOR FULL INFORMATION

the PENETONE Co.

BOX ND-155, TENAFLY, NEW JERSEY

▲ For more details circle NED-59 A5 on enclosed inquiry slip ▲

Machining Teflon* parts like these?



Get all the facts about BIG SAVINGS on Garlock Teflon Rod

Garlock manufactures two grades of Teflon rods—from virgin Teflon (Garlock 8764) and from reworked Teflon (Garlock 9218). Physical properties of both grades are very similar, yet *you can cut costs substantially by using Garlock 9218.*

Both grades of Garlock Teflon rod are furnished in diameters of 1/8" to 4" inclusive.

Write Dept. 34 today for Teflon Rod Circular AD-149 showing physical properties of both grades. Find out how much you can save by ordering Teflon rod from Garlock.

THE GARLOCK PACKING COMPANY, PALMYRA, N.Y.
In Canada: The Garlock Packing Company of Canada Ltd., Toronto, Ont.
**The du Pont Company's Trademark*

GARLOCK MANUFACTURERS OF MECHANICAL PACKINGS SINCE 1887

▲ For more details circle NED-60 A5 on enclosed inquiry slip ▲

NEW SWIVEL-ACTION

BURRQWIK

HAND DEBURRING TOOL

the UNIVERSAL ANSWER

pays for itself in one day!

Deburrs 4 jobs for every 3 deburred with old-style tools. Patented swivel-action leads blade along edges... no more nicks, scallops, or wrist and arm fatigue.

Hardened high speed tool steel **interchangeable blades**—small blade for tubing and small holes—a larger blade for straights, radii and large tubing.

Use BurrQwik for all metals and plastics—for cut, punched, molded and processed edges.

TRIAL SAMPLE!

Without obligation...test—try BurrQwik on your own production jobs—prove its value!

Rated companies may request on letterhead a complete BurrQwik set 500. Act today! Include name and address of your regular industrial supply house.

Anodized aluminum handle and 2 blades, in tough vinylite Pocket Pak—ready for instant use!

A WORLD OF KNOW-HOW
ENGINEERING, MACHINING, WELDING, METAL STAMPINGS, AIRCRAFT PARTS

Universal METAL PRODUCTS, INC.

411 VINELAND ST., BASSETT, CALIF. • KANSAS CITY, MO. BRANCH: CONGRESS BLDG., 3527 BROADWAY

▲ For more details circle NED-61 A5 on enclosed inquiry slip ▲

VERTICAL MILLING ATTACHMENT increases versatility of millers

This vertical milling attachment is designed to increase versatility of Burke No. 3 and 4 bench milling machines and other small millers. Attachment is activated by helical gears, with both spindle and drive arbor supported on presealed roller bearings. This allows high spindle speeds. Unit is driven by splined arbor, direct from milling machine spindle. This feature allows head to be moved close to or away from miller spindle according to job requirements. Head is graduated so that it can be used for angular as well as direct vertical milling. Draw-in collets in sizes from 1/16 to 1/2-in. are available. Made by **Cincinnati Mfg. Corp.,** U. S. Burke Machine Tool Div., Brotherton Rd., Cincinnati 27, O.

▲ For more details circle NED-62 A5 on enclosed inquiry slip ▲

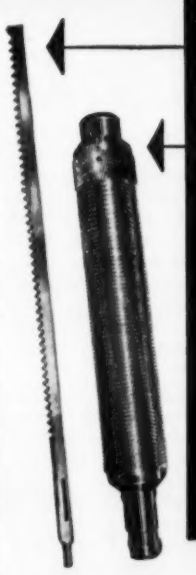
DUST & FUME COLLECTOR air passes through cyclonic wash, then through moisture eliminators

Water, supplied by direct driven pump, cascades downward in this dust and fume collector, producing series of closely related water curtains through which dust-laden air is filtered in its upward travel. Unit consists of cylindrical drum with series of cones and baffles. Baffle design sets up cyclonic washing action and turbulence, separating wet dust and carrying it to sludge tank below. Saturated air continues up through two-stage moisture eliminator and emerges completely dry.

Unit has flat bottom which serves as settling tank from which water is re-circulated. A chute type clean-out is provided for easy hand cleaning. Dust collector is also made with a flight conveyor for ejecting sludge into container. Models are engineered for truss-suspension, floor setting or erection on roofs. Made by **Van-Truer Co.,** Dept. A, 12600 Beech Rd., Detroit 23, Mich.

▲ For more details circle NED-63 A5 on enclosed inquiry slip ▲

For best results specify American BROACHES



When you need simple, accurate, high production keyway broaching specify American keyway broaches.

This complex American Broach is used to finish an automatic drive gear's helical involute teeth. No further internal machining is necessary on the gears which must pass rigid tests before final assembly.

Whether your problem is keyways or complicated involute splines you'll find American-engineered broaches are built to give you higher production and greater accuracy. For American's quotation on your broaching requirements send a part-print and hourly requirements to American today!

WRITE FOR CATALOG 450W

American BROACH & MACHINE CO.
A DIVISION OF SUNDSTRAND MACHINE TOOL CO.
ANN ARBOR, MICHIGAN

▲ For more details circle NED-64 A5 on enclosed inquiry slip ▲

WEBB *hand pushed* **TROLLEYS**

Webb Hand Pushed Trolleys are sturdily built for long life and minimum maintenance. Hardened steel wheels equipped with retainer type ball bearings assure long wearing properties and ease of operation. Triple labyrinth seals keep lubricant in and dirt out. Side guide rollers effectively eliminate binding and excessive wear, especially when moving loads around curves. For simple, inexpensive and easy handling of materials, use Webb Hand Pushed Trolleys.

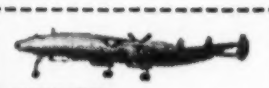
P-2530 TROLLEY
1/2 Ton Capacity
4" to 12" I-BEAM

Write for Bulletin No. 453:

JERVIS B. WEBB CO.
Conveyor Engineers and Manufacturers
8921 ALPINE AVE. • DETROIT 4, MICH.
Offices In Principal Cities

▲ For more details circle NED-65 A5 on enclosed inquiry slip ▲

WHO...ME? AN *AIRCRAFT* ENGINEER?



TURBO-PROP SUPER CONSTELLATION world's fastest propeller-driven transport.

Yes, Lockheed in California can train you...at full pay!

The step up to Aircraft Engineering isn't as steep as you might expect.

Aircraft experience isn't necessary. Lockheed takes your knowledge of engineering principles, your experience in other engineering fields, your aptitude and trains you for aircraft work through a program adapted to the individual.

Part of the program includes on-the-job training. When necessary you attend Lockheed classes. You learn to work with closer tolerances. You become more weight conscious. Because Lockheed's diversified expansion program ranges across the entire spectrum of aeronautical endeavor, you learn that fresh thinking, new ideas are welcomed and rewarded.

Naturally, you receive full pay while training, as well as a wide range of extra employee benefits which add approximately 14% to your salary in the form of insurance, retirement pension, etc. These opportunities for engineers in all fields have been created by Lockheed's long-range development program. Projects include: turbo-jet and turbo-prop transports; supersonic fighters far exceeding present-day aircraft in performance; advanced versions of vertical rising aircraft, jet trainers and bombers; nuclear energy applications to aircraft; and a large number of significant classified projects.

From a career standpoint, it is significant that a large measure of Lockheed's development program involves commercial aircraft.

Equally important from a living standpoint is the better life you lead in Southern California. Year-round sunshine, varied cultural and recreational opportunities, and scenic beauty of San Fernando valley provide the ideal background for modern living. You are invited to write for a brochure describing life and work at Lockheed and a job application blank. Coupon below is for your convenience.

Mr. E. W. Des Lauriers, Dept. NE-1
Lockheed Aircraft Corporation
1708 Empire Avenue, Burbank, California

LOCKHEED AIRCRAFT CORPORATION
BURBANK, CALIFORNIA

Dear Sir: Please send me your brochure describing life and work at Lockheed in Southern California.

My name _____

My present field of engineering _____

My street address _____ My city and state _____

▲ For more details circle NED-66 A5 on enclosed inquiry slip ▲

Nose! Throat! PARCHED? DUSTY?

YOU NEED . . .
Water-cooled

DUPOR No. 20

Double sponge filters, saturated with water before wearing, provide cool breathing even under hot, dusty or smoky conditions. Paint shops, foundries, steel mills, chemical labs, oil refineries, etc. have used and recommended this respirator for years. Regardless the industrial dust or fume hazard, here is an individualized air-conditioning unit that makes breathing safe for every worker. Get details! Sample sent $2.50 postpaid.

H. S. COVER, SOUTH BEND, IND.
"Respirators for Industry since 1894"

▲ For more details circle NED-68 A5 on enclosed inquiry slip ▲

NEW UNIT WELDING TRANSFORMER

a small, compact, high efficiency transformer for portable spot welders, multiple point welders, and many other resistance welding applications

This transformer is designed and built by Sciaky. Designed in accordance with J. I. C. Standards for Type 1-A transformers, this new unit offers several distinct advantages . . .

SMALL, COMPACT SIZE permits mounting close to weld to minimize power loss . . .
BALANCED SECONDARY CURRENT most important to multiple point spot welding applications . . .
HIGHEST EFFICIENCY possible for its size . . .
MOUNTING VERSATILITY permits wide variety of mounting positions . . .
LIGHTWEIGHT for ease of handling . . .

Available in sizes from 50 KVA to 70 KVA for either 220V or 440V at 60 cycles.

Write for complete specifications contained in *Bulletin* 328-10.

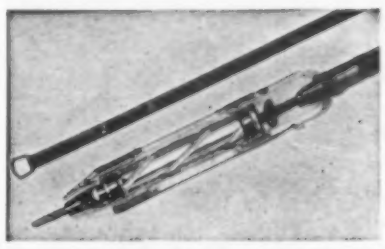
SCIAKY

Largest Manufacturers of Electric Resistance Welding Machines in the World

SCIAKY BROS., INC., 4920 W. 67th Street, Chicago 38, Illinois

▲ For more details circle NED-69 A5 on enclosed inquiry slip ▲

HIGH SPEED PENCIL GRINDER
air tool operates at 100,000 rpm



Perfect balance and precision bearings at each end of the rotor in this improved model 100,000-rpm Pencil Grinder assures smooth, vibrationless operation. Fluted rotor extends full length of the rifled barrel, and the air stream creates no pulsations. Rotor is suspended on cushion of air. Exhaust air is directed on point of cutting tool to keep work free of chips. Finger-tip speed control and enclosed chuck are added safety features. Made by **Nu-Jett Products Corp.**, Dept. N-7, 1355 Michigan Ave., Grand Rapids, Mich.

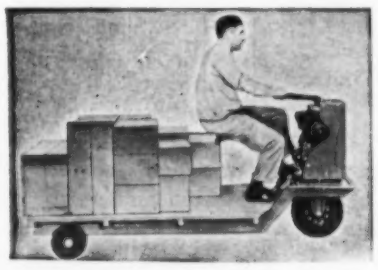
▲ For more details circle NED-70 A5 on enclosed inquiry slip ▲

LITERATURE STAND
for folders, price lists, plans

Transparent Plexiglas is used in construction of this "take one" stand, designed for display of folders, charts, plans, price lists, etc. Up to six different pieces of literature are held in individual sections each 4 in. wide. Top sections are 1 in. deep and bottom sections are 1⅜ in. deep. Front of stand can be imprinted. Available from **Karl G. Behr Advertising Agency, Inc.**, Advertising Specialty Dept., 300 Francis Palms Bldg., Detroit 1, Mich.

▲ For more details circle NED-71 A5 on enclosed inquiry slip ▲

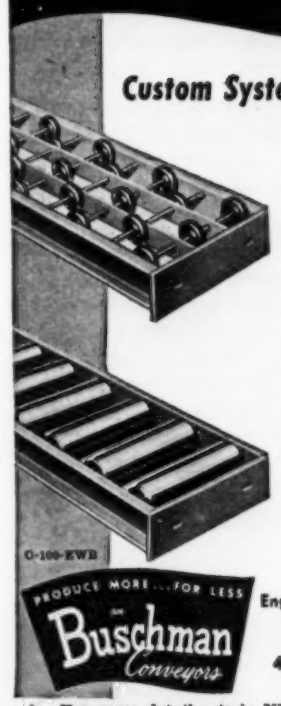
PLATFORM TRUCK
hauls loads up to 1500 lb



Platform less than 12 in. from the floor is feature of Multiton - Excelsior motor driven platform truck. Measuring 69 x 38 in., it is driven by a Briggs & Stratton single-cylinder engine through a three-speed gearbox to front wheel. Entire power unit swivels through 360 degrees so that all gear ratios are available in forward and reverse travel. Operator is normally seated, but can control the truck from a walking position. Capable of moving 1500-lb loads, the pneumatic-tired truck weighs 370 lb empty. Available from **Stokvis-Edera & Co.**, Dept. NE, 18 Secatoag Ave., Port Washington, N. Y.

▲ For more details circle NED-72 A5 on enclosed inquiry slip ▲

Buschman Wheel and Roller CONVEYORS



Custom Systems from Standard Units

Gravity conveying systems to meet your needs are set up quickly from Buschman wheel and roller components. Lightweight aluminum or steel construction and Quick-Eez coupling make rearrangement fast and easy.

Buschman wheel and roller components include straight and curved sections in three widths, switches, adjustable tubular stands and accessories.

Buschman wheel and roller conveyors are stocked at the factory and by leading distributors throughout the country, who can engineer systems to meet your needs.

Write today for Bulletin 15

C-100-EWB

PRODUCE MORE . . . FOR LESS
Buschman Conveyors

Complete Conveyor Systems For All Types of Industries
Engineered • Manufactured • Installed

THE E. W. BUSCHMAN CO.
4482 Clifton Ave. • Cincinnati 32, Ohio

▲ For more details circle NED-73 A5 on enclosed inquiry slip ▲

The New CLEARVIEW
NAMEPLATE PRESS

EASY TO OPERATE • COMPACT • DURABLE

Here at last is a new low-priced Nameplate Press that will pay for itself quickly and many times over.

Now you can stamp neat, perfectly aligned letters and figures on all types of identification plates with this new, easy-to-operate Nameplate Press: MACHINERY DETAIL PLATES KEYS — TAGS — CHECKS IDENTIFICATION PANELS and scores of other identification purposes.

ELIMINATES OBSOLETE STAMPING BY HAND

- Stamps Neat Uniform Characters
- Fully Automatic Letter Spacing
- High Quality Hardened Steel Dial
- Interchangeable Dial Adjustment
- Accommodates Plates up to 4" x 8"
- Prevents Irregular Alignment—Spacing—Depth

FULLY GUARANTEED

Write, call or wire today for complete information and price.

PERMANENT IDENTIFICATION—It is often hard to keep tab on various pieces of equipment because of inadequate or temporary methods of identification marking. A solution to this dilemma may be the metal stamping machine illustrated.

The CLEARVIEW Company
215 EAST SECOND STREET NEW YORK, N. Y.

▲ For more details circle NED-74 A5 on enclosed inquiry slip ▲

The Little Saw with the Big Capacity
JEFFERSON "601"
POWER HACK SAW

The IDEAL SAW for:

Machine Shops
Welding Shops
Implement Shops
Garages
Hobby Shops
Blacksmiths
Service Stations
Plumbers
Electricians
Farmers
Steamfitters
Maintenance Men

THE LARGE VARIETY OF USES PUTS THIS HANDY SAW IN BIG DEMAND GROUP

This little saw does a truly big job with precision accuracy and dependability. It cuts all metals including steel, brass and aluminum. It will handle up to 3½" x 3½" stock — square, round or pipe. Standard equipment includes a swivel vise which mitres up to 45°, and a sturdy gauge bar for uniform length of cut stock.

...and, IT SELLS FOR ONLY $71.50 including motor, F.O.B. Eau Claire, Wisconsin.

Write today and let us send you complete information and details.

Sales Service Machine Tool Co. SSMT
PRESS RITE PRESSES • SHAPE RITE SHAPERS • KELLER POWER HACK SAWS
2365 UNIVERSITY AVENUE • ST. PAUL 14, MINN.

▲ For more details circle NED-75 A5 on enclosed inquiry slip ▲

HANSEN
Quick-Connective
TWO-WAY SHUT-OFF COUPLINGS

Female pipe thread connections from ⅛" to 1"

Both ends of line are positively sealed when you disconnect a Hansen Series HK Two-Way Shut-Off Coupling. To connect, just pull back sleeve and push Plug into Socket. To disconnect, merely pull back sleeve. No tools required. Identical valves in Socket and Plug permit free flow of gas or liquid when Coupling is connected—practically eliminate spilling of liquid or escape of gas when disconnected. Available in brass or steel.

SERIES 4-HK TWO-WAY SHUT-OFF COUPLING

Also Straight-Through and One-Way Shut-Off Couplings. Write for catalog.

THE HANSEN MANUFACTURING COMPANY
4031 WEST 150th STREET • CLEVELAND 11, OHIO

▲ For more details circle NED-76 A5 on enclosed inquiry slip ▲

Another new development using

B. F. Goodrich Chemical *raw materials*

B. F. Goodrich Chemical Company does not make this feeder. We supply only the Geon resin for the rigid vinyl plastic.

All rigid vinyl feeder handles sulfuric acid 24 hours a day

THE feeder pictured supplies a steady flow of concentrated sulfuric acid to a production process. In use 24 hours a day, it required no maintenance or repairs after 6 months of this severe service. This remarkable record is due to the outstanding corrosion resistance of Geon rigid vinyl from which all feeder parts, except the motor, are made. Similar feeders made from other materials frequently broke down in service. Geon rigid vinyl handles corrosive materials, is tough, strong and has excellent electrical properties. For technical information, write Dept. BU-1, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

Geon Polyvinyl Materials

GEON RESINS • GOOD-RITE PLASTICIZERS . . . the ideal team to make products easier, better and more saleable
GEON polyvinyl materials • HYCAR American rubber and latex • GOOD-RITE chemicals and plasticizers • HARMON colors

▲ For more details circle **NED-77 A5** on enclosed inquiry slip ▲

Order USG® brushes because

- Years of practical experience in all types of applications assure you of the proper USG brush for your equipment.
- Controlled manufacturing uniformity gives you the same brush every time you order.
- There is a USG representative near your plant. See him or write for your copy of the USG Brush Catalog B49 today.

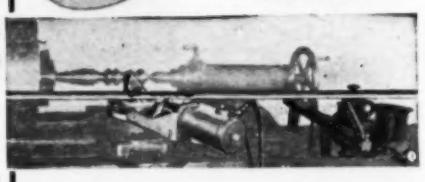
THE UNITED STATES GRAPHITE COMPANY
DIVISION OF THE WICKES CORPORATION
SAGINAW, MICHIGAN

198

▲ For more details circle **NED-78 A5** on enclosed inquiry slip ▲

HOW TO CONVERT ANY LATHE TO AN AUTOMATIC TRACER—IN MINUTES AND — AT HALF THE COST

WITH THE **BEMCO** HYDRAULIC TRACER



- Duplicate to within .0005"
- Copies any combination of diameters
- Does internal copying
- Mounts on any lathe—no drilling or machining needed
- Complete with circuit breaker motor, gear pump oil tank, and micro-filter
- Operates at any pressure from 50 to 500 psi

Here is a brand new, low cost profit maker for any machine shop. You can copy virtually anything with this efficient BEMCO hydraulic tracer. Low original cost . . . easy operation . . . long lasting . . . easy to install. *Get all the facts. Send for complete details today. Ask for free bulletin.*

BEMCO

BADALL ENGINEERING & MFG. CO.
4902 CALUMET AVE. HAMMOND, INDIANA
Phone—RUSSELL 6671

▲ For more details circle **NED-79 A5** on enclosed inquiry slip ▲

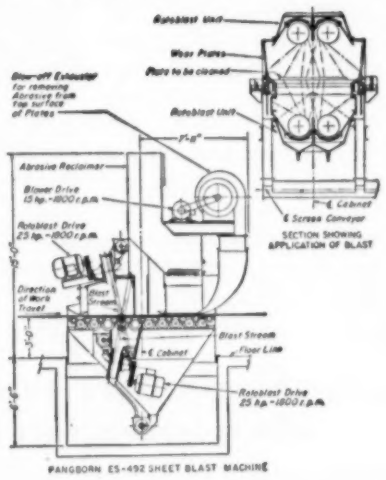
HOT SPRAY CONVERSION KIT converts cold paint spray systems

Heat replaces thinner as the viscosity reducing agent when the model V.950 Thermo-Volumaire unit is used to convert any high pressure cold paint spray system to hot volume air spraying. Temperatures of air and heat are controlled between 80 and 250° F by attaching standard high pressure air and paint hoses to the unit. Paint is sprayed at its original consistency with one coat coverage, thereby reducing labor time and paint costs and eliminating thinner costs. Use may be at any distance from the paint and air source. Made by **Roxon, Inc.**, Dept. E, 50 Broad St., New York 4, N. Y.

▲ For more details circle **NED-80 A5** on enclosed inquiry slip ▲

SHEET BLASTING MACHINE simultaneously cleans both sides of sheet in widths up to 60 in.

Steel sheet and plate up to 60 in. wide is blast cleaned on both sides simultaneously at rate of 60 to 100 sq ft per side per minute by model ES-492 Rotoblast machine. Unit is equipped with four standard Rotoblast wheels capable of throwing 112,000 to 132,000 lb of abrasive per hour. Blast streams from top and bottom hit sheet at same point so there is little tendency for sheet to warp. Abrasive is blown off sheet as it moves past fan tunnel after blasting.



Blast wheels are set over 12 degrees from vertical, causing abrasive to strike sheet at 78-degree angle. Abrasive thus bounces away from point of impact so that continuing stream strikes sheet and not spent abrasive. Rubber covered idler rolls which carry sheet through machine can be lifted out through access doors and replaced, if necessary.

Each wheel is powered by 20 or 25 hp, 1800-rpm motor and uses 3-in. wide vanes. Machine measures 15 x 18 x 20 ft. Made by **Pangborn Corp.**, 140 Pangborn Blvd., Hagerstown, Md.

▲ For more details circle **NED-81 A5** on enclosed inquiry slip ▲

UNUSUAL BARGAINS

SAVE TIME AND MONEY ON INSPECTIONS!

$225.00 Value *Only* **$95** Postpaid

STEREO MICROSCOPE
With Changeable Objectives

Wide, 3-Dimensional Field — Excellent Working Depth

Fine, imported Binocular Microscope at a substantial saving. Used for inspections, examinations, counting, checking, etc. Erect image for easy interpretation. You get 2 pairs of eyepieces, 2 pairs of objectives (slide in and out on machined surfaces). Power range from 13X to 75X. Variable inter-ocular distance. Will accommodate standard eyepiece reticles. Rack and pinion variable tension focusing. Hardwood carrying case included. Accessories available. Recommended for lab, shop, factory or home use. We guarantee complete satisfaction or your money back.

Order Stock No. 70,036-AE. $95 ppd
Send Check or Money Order or order on open account.

For Precision Timing in Plant or Lab!

ALARM WRIST WATCH

- 17 JEWEL
- LUMINOUS
- SHOCK-PROOF

Only **$49.50** Pstpd.

For timing of production operations, laboratory processes, or "alerting" to appointments. Imported from Germany! 17 jewel precision timepiece with luminous dial for night use. Alarm is set by turning glass rim. Tone may be adjusted to loud or soft. Watch runs 42 hours on one winding—is shock-proof, anti-magnetic. Money-back guarantee

Order Stock No. 50,030-AE ..... **$49.50 Pstpd.**
(Send check or M.O., or order on open acct.)

GET FREE CATALOG "AE"

If you haven't seen our big, FREE Catalog, you don't know what you [illegible]ing. Fantastic variety—never before have so many lenses, prisms, optical [illegible]ments, and components been offered from one source. Positively the greatest assembly of bargains in all America. Imported! War surplus! Telescopes! Microscopes! Hand Spectroscopes, Prisms, Lenses, Reticles, Mirrors and dozens of other hard-to-get optical items. Write for FREE CATALOG "AE".

EDMUND SCIENTIFIC CORP., Barrington, N. J.

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WIRE-MIKE takes guesswork out of wiring

- pocket size, 4½" closed, 2 oz. weight
- heavy-gauge stainless steel
- inside and outside caliper, calibrated in 32nds
- precision-etched direct reading scales
- pipe size to i. d. conversion table
- genuine leather sheath

Frankly, we never intended to get into the WIRE-MIKE business. Our engineers designed WIRE-MIKE as a labor of love—because they felt such a tool was long overdue. We made several hundred for our friends, and thought we had heard the last of it. Not so. Before you could say "WIRE-MIKE," we were snowed under with demands for this handy gadget. Since our distributors knew we couldn't keep *giving* them away, they asked us to put WIRE-MIKE into production at a nominal price. A few improvements make WIRE-MIKE better than ever—now everyone can have this famous precision lifetime tool for instantly measuring *conductor size* (stranded, solid or ACSR), *conduit size* (rigid or thinwall), and *pipe size*. Only $1.95 at your Burndy distributor. 54-20

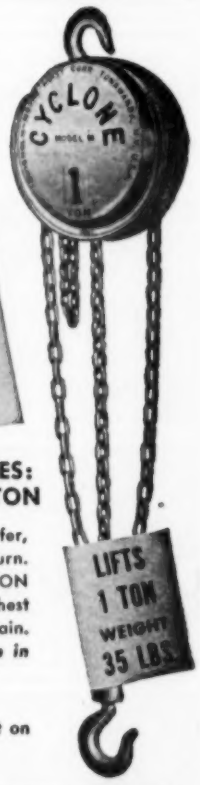
BURNDY ENGINEERING CO., Inc., 700 Richards Ave., Norwalk, Connect.

▲ For more details circle **NED-83 A5** on enclosed inquiry slip ▲

RECEIVING...PRODUCTION,... WAREHOUSE...SHIPPING... MAINTENANCE

every department can use the CM CYCLONE

HIGH-SPEED—HEAVY DUTY—ALUMINUM ALLOY
CHAIN HOIST



CAPACITIES: ¼ TO 10 TON

● Help your men get lifting jobs done quicker, safer, with less physical effort. Increase labor dollar return. PORTABLE—Carry with one hand. EASY OPERATION—Less hand chain pull. LOW HEADROOM—Highest possible lift. HERC-ALLOY flexible welded load chain. Lifetime lubrication. *More CYCLONE Hoists are in use today than any other hoist in their class.*

CYCLONE CATALOG NO. 145
Illustrates, describes and prices all models. Sent on request or ask your CM Distributor.

CM HOISTS AND CHAIN

CHISHOLM-MOORE HOIST DIVISION
COLUMBUS McKINNON CHAIN CORPORATION
TONAWANDA, NEW YORK
DISTRICT OFFICES: NEW YORK, CHICAGO, CLEVELAND

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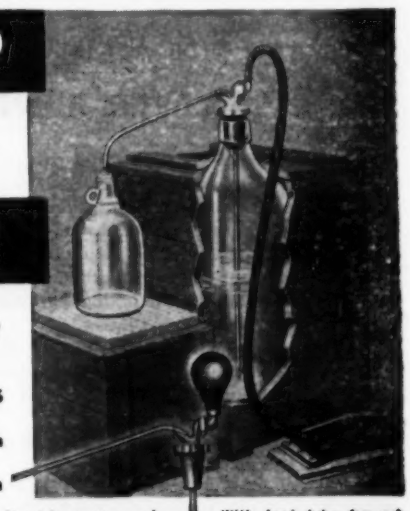
PUMP CORROSIVE AND OTHER LIQUIDS SAFE



FAST AND CONVENIENT

FOR CARBOYS, BARRELS AND DRUMS
BY HAND
Type A 2-3 gpm
BY FOOT
Type FH 3-4 gpm

A smooth flow of liquid starts and stops quickly. All parts in contact with liquid are corrosive resistant. No dangerous pressures. Relief valve.

FREE! Write for big 64 page illustrated catalog describing and pricing hundreds of safety products.

With lead tube for sulphuric, hydrochloric, hydrofluoric, etc.
HAND PUMP TYPE A **$14.25**
FOOT PUMP TYPE FH **$15.75**

With Saran flexible tube for nitric, phosphoric, acetic, etc.
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ORDER TODAY
ORDERS SHIPPED ON OPEN ACCOUNT

A DEPENDABLE GUIDE TO SAFETY GES

GENERAL SCIENTIFIC EQUIPMENT CO.
GENERAL SAFETY EQUIPMENT
2701 W. HUNTINGDON ST., PHILADELPHIA 32, PA.

SAFETY EQUIPMENT FOR EVERY HAZARD

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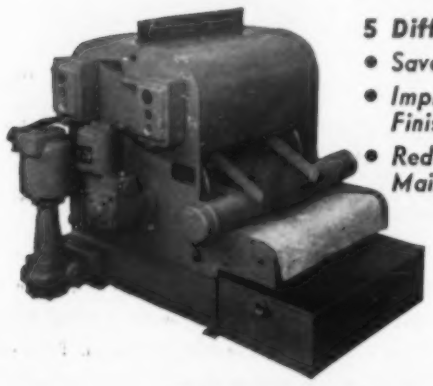
BARNESDRIL
COOLANT FILTERS
Provide Selective Clarity In Coolant Cleaning!



5 Different Models
- *Save Coolant*
- *Improve Work Finishes*
- *Reduce Machine Maintenance*

Take out impurities and objectionable matter, either ferrous or non-ferrous, to the degree practical for your production purposes. BarnesdriL Engineers maintain modern laboratory facilities for complete analysis of your coolant problems. Ask for their recommendations.

Send for Bulletin 350CY

COOLANT BARNESDRIL CLEANING

FILTRATION DIVISION
BARNES DRILL CO.
866 CHESTNUT STREET • ROCKFORD, ILLINOIS

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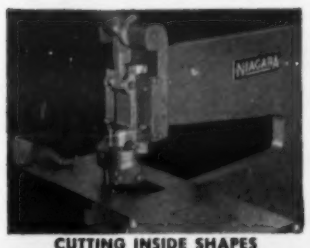
look at a few of the many jobs this one machine can do for you

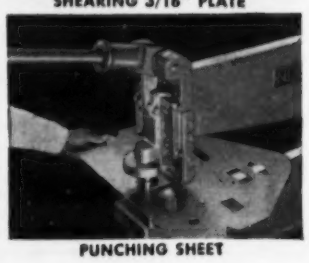

CUTTING INSIDE SHAPES

CENTER SLITTING 48" WIDE SHEET

NOTCHING ANGLE IRON

SHEARING 3/16" PLATE

PUNCHING CHANNEL

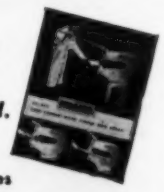

PUNCHING SHEET

IT'S THE NEW NIAGARA NO. 5-24 LEVER PUNCH & SHEAR

Yes, this versatile new machine can do all these things and more. With a 5-ton capacity and a 24-inch throat, it is ideal for diversified operations in industrial sheet metal shops, maintenance departments, experimental and model shops.

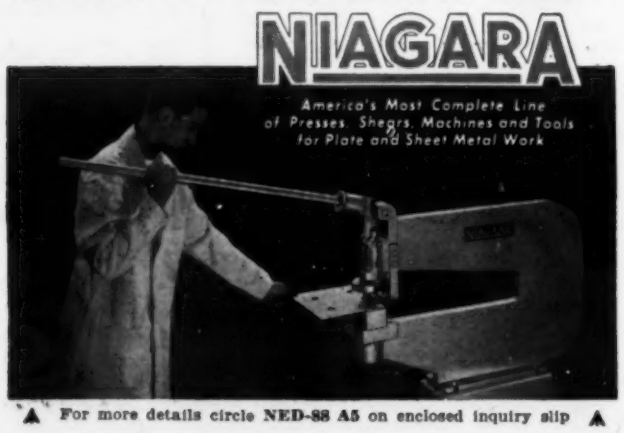
Equipped (optionally) as a punch or shear or both, it is readily converted from one to the other. A large selection of punches and dies is available for handling a tremendous variety of work.

HERE'S THE COMPLETE STORY
Bulletin 79-B contains detailed information and specifications. Write for your copy.



NIAGARA MACHINE & TOOL WORKS, BUFFALO 11, N. Y.
DISTRICT OFFICES:
Buffalo • Cleveland • Detroit • New York • Philadelphia
Dealers in principal U.S. cities and major foreign countries

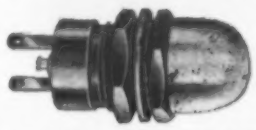
NIAGARA
America's Most Complete Line of Presses, Shears, Machines and Tools for Plate and Sheet Metal Work



▲ For more details circle NED-88 A5 on enclosed inquiry slip ▲

SUBMINIATURE PILOT LIGHTS are self-contained assemblies

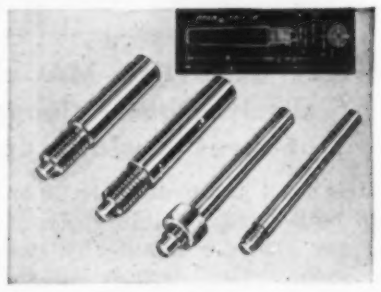
Socket, lamp and all connections are well insulated from the 15/16-in. diameter mounting bushing of this line of Dialco subminiature pilot light assemblies.



Two terminals are provided for electrical connections, and bushing can be grounded to the panel. Stovepipe-shaped heat-resistant plastic cap has omnidirectional visibility. Bulb extends into cap so that its glow is visible from all angles. Cap can be transparent, light diffusing or completely diffusing in clear or any of six colors. Brass metal parts are finished in black nickel, white nickel or chrome. Tinned terminals are perforated for easy soldering. Made by **Dialight Corp.**, 64 Stewart Ave., Brooklyn 37, N. Y.

▲ For more details circle NED-89 A5 on enclosed inquiry slip ▲

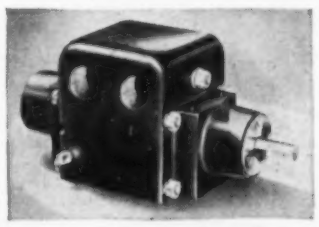
TAPER PINS threaded end affords versatility



Threaded ends which fit standard nuts have been added to company's conventional taper pins to enable their use as locating or aligning pins, or for mounting units which are occasionally removed or replaced. Pins can be used to align motors, pumps or blowers to solid bases, or component parts of machinery. They will meet any dowel pin or taper pin application where a blind hole is involved. By turning nut, or by leverage, jacking action can be applied to remove pin from blind hole. Pins are furnished in any length or diameter, tapered ¼-in. per foot and in various metals with turned or centerless ground finishes. Made by **John Gillen Co.**, 2562 S. 50th Ave., Cicero 50, Ill.

▲ For more details circle NED-90 A5 on enclosed inquiry slip ▲

SYNTHETIC RUBBER PUMP with corrosionproof metal shaft



Boiling hydrochloric, sulphuric and mixed acids can be handled by this synthetic rubber pump equipped with Hastelloy-B shaft, eccentrics and guides. With these parts made of Hastelloy-C, service is extended to handling highly oxidizing agents. Positive displacement oscillating rotary type pump is designed for turbulence-free pumping of chlorine-bearing fluids, acids, alkalies and organic and inorganic chemicals compatible with its synthetic rubber body. Capacities up to 10 gpm and pressures to 100 psi are realized at a sustained 1725 rpm. Impellers of the self-priming pump are of duPont neoprene, Hypalon or Teflon. Made by **Eco Engineering Co.**, Dept. NED, 12 New York Ave., Newark 1, N. J.

▲ For more details circle NED-91 A5 on enclosed inquiry slip ▲

TEMPERATURE CONTROL for furnaces, ovens, heating devices

Service voltage supplies all power to the Amplitrol automatic temperature control for electric furnaces, ovens and other industrial heating devices. Potentiometer type instrument requires no manual or automatic standardizing at any time. Operation is by turning control dial to the desired temperature, held with accuracy of 1 per cent of scale range. Red and green lights flash on and off alternately at a rate necessary to hold set temperature within close limits. Instrument is available in various scale ranges with Fahrenheit or Centigrade dials and iron vs constantan and chromel vs alumel thermocouples. Made by **Thermo Electric Mfg. Co.**, 484 Huff St., Dubuque, Iowa.

▲ For more details circle NED-92 A5 on enclosed inquiry slip ▲

HOMER MAGNETIC SHEET SEPARATORS

Make it easier, faster and safer for employees to handle round, square, nested, irregular or odd shaped stacks of steel sheets—in shearing, welding, pressing, riveting or similar production operations. Prevent double feeding of sheets—protect dies and machinery. Oily, polished, enameled or painted sheets separated without prying, scratching or marring the surfaces.

WRITE FOR BULLETIN SS-210

THE HOMER MANUFACTURING CO., INC.
DEPT. 1-25 LIMA, OHIO

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Now! DO ALL THESE

Angle pocket milling — Angle drilling
Angle shaping — Angle milling
Angle grinding — Angle checking

on standard machines with a Wesson Precision Angle Vise

2 models immediately available
4" maximum jaw opening, 4" jaw width
1⅜" maximum jaw opening, 3" jaw width

Ask for illustrated bulletin describing Wesson Universal Vises and Angle Plates.

Wesson Products Company
1220 Woodward Heights Blvd. • Detroit 20, Michigan

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For top quality lightweight castings turn to WELLMAN. You'll be sure of getting:
- An experienced manufacturer
- A product made under close laboratory control
- Competent designers to work with your engineers
- A wide range of specifications and alloys
- Production economy

Catalog No. 53 on request

Well-Cast MAGNESIUM, ALUMINUM AND BRONZE CASTINGS
Well-Made WOOD AND METAL PATTERNS

THE WELLMAN BRONZE & ALUMINUM CO.
Dept. 9, 12800 Shaker Boulevard Cleveland 20, Ohio

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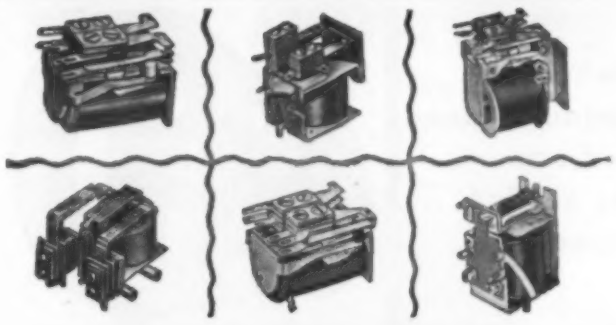

COMAR RELAYS

made **better** to work **better**

Comar relays are "custom-manufactured" to your specifications, to fit your requirements. You get the exact physical size and electrical characteristics necessary for easy installation and top performance . . . yet you pay no more. Send for full details.

Comar ELECTRIC COMPANY
3349 ADDISON STREET CHICAGO 18, ILLINOIS

RELAYS • SOLENOIDS • COILS • TRANSFORMERS • SWITCHES • HERMETIC SEALING

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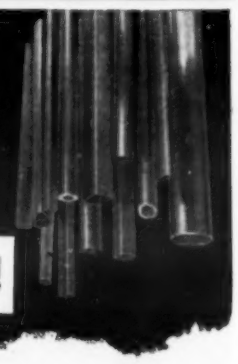
SAVE TIME!
CUT COSTS!
ELIMINATE SCRAP!



Why buy bar stock then spend valuable time drilling it to make tubing? OSTUCO tubing, seamless or electric welded, is delivered fabricated to your specifications, or in lengths for your own machining.

OSTUCO tubing assures greater strength because both inside and outside are worked. You eliminate time-consuming machine set-up, slow, costly drilling of bar stock and the resulting scrap metal.

Prove to yourself the economy and versatility of OSTUCO tubing. Send us your blue prints for quotations. You'll be pleased with the savings OSTUCO tubing can effect in your operations.

Write today for your free copy of "OSTUCO TUBING," a helpful catalog which describes sizes and types of tubing.

OSTUCO SHELBY, OHIO

OHIO SEAMLESS TUBE DIVISION
of Copperweld Steel Company • Shelby, Ohio

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MAXITORQ
OVERLOAD RELEASE CLUTCH
Protects High-Speed Machinery

Automatic overload release feature eliminates costly shutdowns by protecting machinery and products from damage due to accidental overloading of mechanism. Specifically recommended for applications where nature of overload may be a heavy shock, or suddenly-applied load substantially greater than normal driving load. Simple finger-tip adjustment. Six capacities, ¼ to 5 h.p. at 100 r.p.m. Send for bulletin.

THE CARLYLE JOHNSON MACHINE COMPANY
1CJ55 DEPT. NE-1, MANCHESTER, CONNECTICUT

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MAGNESIUM CONVEYOR
portable unit made in two capacities

Installable as a complete system or in individual sections with couplers to match existing systems, this lightweight magnesium roller conveyor is suitable for permanent or portable use. Capacities of 500 and 900 lb are available with roller lengths from 12 to 20 in. Portable magnesium stands in three height ranges from 17 to 72 in. above floor level are also offered. Made by **Magline Inc.**, P. O. Box 200, Pinconning, Mich.

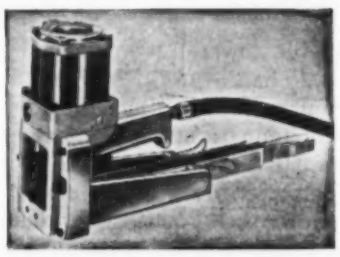
▲ For more details circle **NED-99 A5** on enclosed inquiry slip ▲

HIGH SPEED DRILL PRESSES
for 0.014 to 0.250-in. holes

Speed range from 100 to 45,000 rpm covered by models P and D high speed drill presses allows sensitive drilling of small holes from 0.014 to 0.250-in. diameter. Model P has ⅛-in. capacity in mild steel and 3/16-in. capacity in nonferrous metals, while model D has ¼-in. capacity in mild steel. Maximum lift of table feed is 1½ in. Chuck to table distance is 6 in. Units have 4-in. table diameter and will drill to center of 7-in. circle. Model P has Super 30 power unit with direct drive 1/5-hp motor, while model D is powered with Diros gear motor with speed reduced through planetary gears. Made by **Precise Products Corp.**, 1346 Clark St., Racine 11, Wis.

▲ For more details circle **NED-100 A5** on enclosed inquiry slip ▲

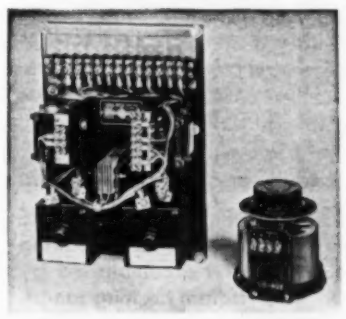
PORTABLE STAPLER
air-operated unit weighs 8 lb 12 oz



Retractable anvil stapling head with two pivoting anvils that penetrate the carton to provide a clinching base for the entering staple is incorporated in the model AB-1 portable stapler. Air-operated unit weighs 8 lb 12 oz and has a two-cycle air motor which prevents "machine gun effect" of continuous cycling. Anvil and staple penetration can be adjusted to prevent damage to fragile contents of cartons. Stapler has pistol grip handle, trigger activating switch and operates on 50-psi air pressure. Made by **International Staple & Machine Co.**, 802 E. Herrin St., Herrin, Ill.

▲ For more details circle **NED-101 A5** on enclosed inquiry slip ▲

MOTOR SPEED CONTROLS
for assembly into equipment



Variac motor speed controls in sizes from 1/15 to 1½ hp are now available in stripped - down form for assembly into various types of equipment. They provide for operating direct current motors from alternating current power lines. All parts except speed control element are mounted on a metal chassis with connections brought out to a terminal strip. Various circuit arrangements can be used, depending on need for reversing, dynamic braking or other variations, but only the Variac element and switches need be at the control point. Controls offer wide speed range, smooth adjustment, high starting torque, quick reversing, no torque pulsation and smooth starting. Made by **General Radio Co.**, Massachusetts Ave. & Front St., Cambridge 39, Mass.

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AURAND
CLEANING TOOLS
ELECTRIC OR PNEUMATIC

Zip away **SCALE RUST PAINT**

Powerful rotary chipping action completely removes stubborn accumulations from iron, steel, brick, concrete, etc. with less effort. Adjustable depth shoe for controlling depth of cut. Renewable cutter heads. Two sizes in both electric and pneumatic models. Lightweight.

Write Dept. 14 for the money-saving facts.

AURAND MFG. & EQUIP. CO.
1210 Ellis St. • Cincinnati 23, Ohio

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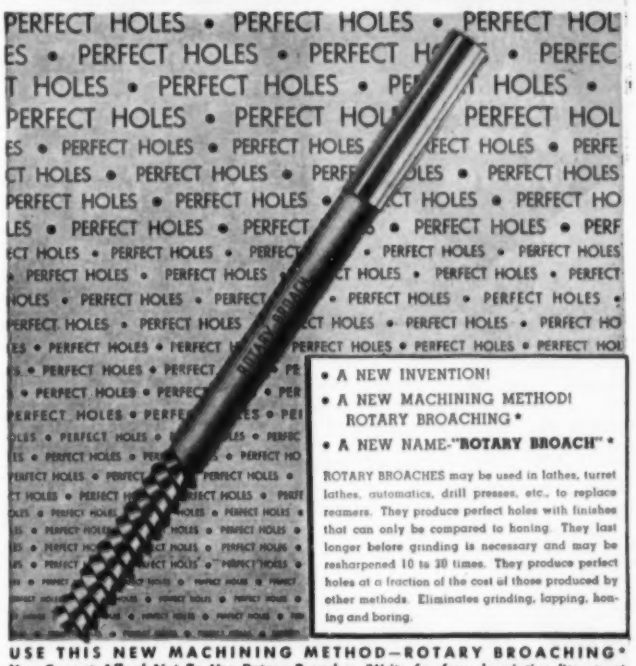
PERFECT HOLES



• A NEW INVENTION!
• A NEW MACHINING METHOD! ROTARY BROACHING*
• A NEW NAME-"ROTARY BROACH"*

ROTARY BROACHES may be used in lathes, turret lathes, automatics, drill presses, etc., to replace reamers. They produce perfect holes with finishes that can only be compared to honing. They last longer before grinding is necessary and may be resharpened 10 to 30 times. They produce perfect holes at a fraction of the cost of those produced by other methods. Eliminates grinding, lapping, honing and boring.

USE THIS NEW MACHINING METHOD—ROTARY BROACHING*
You Cannot Afford Not To Use Rotary Broaches (Write for free descriptive literature)
* "Rotary Broach" and "Rotary Broaching" are new names coined and copyrighted by Shearcut Tool Company.
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When you want Perfect Holes, consult
SHEARCUT TOOL COMPANY
Box 397, Dept. NE-33 • • • • Reseda, California

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PERMANENT
MAINTENANCE-FREE
INDUSTRIAL FLOORS

ANCOR AND ANCORETTE *Rolled Steel* FLOOR PLATES

From this most complete line of die stamped steel floor plates you can get a type to exactly suit your *need* and *budget* . . . steel plates only or completely installed floors.

. . . SAFE
. . . PRACTICAL
. . . EVERLASTING

Send for full information

FLASH-STONE COMPANY, INC.
3723 Pulaski Avenue, Phila. 40, Pa.
Please send complete information on Ancor and Ancorette Floors

NAME_____
COMPANY_____
ADDRESS_____

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TORIT DUST COLLECTORS

...Really draw!

A size and model to solve any dust collecting problem. Torit collectors provide complete, all-around dust control. Torit collectors are unitized for custom installation on each machine, giving power and suction only when machine is operating. Keeps plant and machines free from clogging and unsightly dust. Furthermore, cleaned and filtered air is exhausted back *into* the room maintaining heat balance. Find out now how Torit unitized dust control is engineered to your problems.

National Plant Maintenance and Engineering Show — January 24-27 1955 — International Amphitheatre — Chicago

See our catalog in Sweet's Machine Tool File, or write:

TORIT MANUFACTURING CO.
298 Walnut St., St. Paul 2, Minn.

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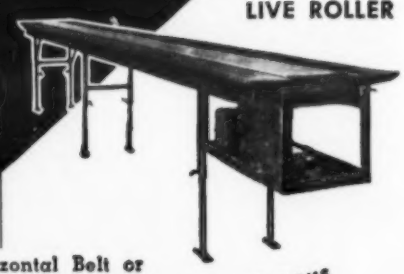
CONSOLIDATE HANDLING and PRODUCTION WITH A METZGAR APRON CONVEYOR

BELT or LIVE ROLLER



Any Metzgar Horizontal Belt or Horizontal Live Roller Conveyor can be furnished with aprons attached to form a continuous bench-type working area — full length or in suitable work station lengths. Standard widths 9" and 12" from edge of belt. Other widths available.

MANY APPLICATIONS — Ask our engineers to show you how Apron Conveyors can serve you best. Explain your requirements.

Continuous *Flow* through all successive work stations
- assembly —
- inspection —
- packaging — and
- shipping

METZGAR CONVEYOR CO.
416 Douglas St., N. W.
MFRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES & REEL DOLLIES
GRAND RAPIDS 4, MICH.

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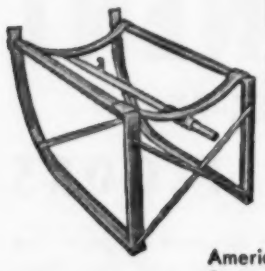

Load heavy drums single-handed with AMERICAN barrel cradles

American Barrel and Drum Cradles make fast, easy work of every loading job—even for one man—save time, money, back-breaking strain, prevent injury.
- **Patented, disappearing loading bar makes loading safer, faster, less work.**
- **All-steel construction gives strength without needless weight.**
- **Height 18", with or without wheels.**
- **Shipped semi-knocked-down in cartons to save warehouse space, keep cradles in top condition.**

Barrel Cradles are only one item of a full line of American Manual Material-Handling Equipment for every type of moving job—over 50 models and sizes.

Stocked and sold nationally by over 350 Distributors

Write for free catalog.

AMERICAN HAND TRUCK HEADQUARTERS

The American Pulley Company
4294 Wissahickon Ave., Phila. 29, Pa.
Please rush your free catalog showing the complete American Material-Handling line.

Name_____
Company_____
Address_____
City_____ Zone____ State____

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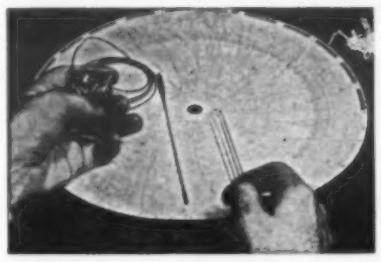
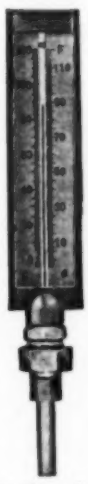
INSTRUMENT RECORDING PEN fed from sealed plastic ink sac



Capillary action maintains continuous flow of ink to this lightweight stainless steel instrument recording pen from a clear, hermetically sealed plastic ink sac containing over a year's supply. As many as four pens can trace on parallel time arcs only 0.042-in. apart with good legibility. Sealed inking system prevents sludge and oxide formation. Inking system is designed for use on Bailey recorder. Made by **Bailey Meter Co.**, 1022 Ivanhoe Rd., Cleveland 10, O.

▲ For more details circle **NED-109 A5** on enclosed inquiry slip ▲

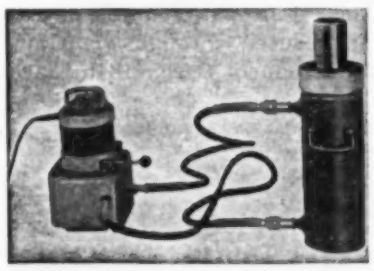
INDUSTRIAL THERMOMETER black markings on white face



U-shaped extrusion used in making this industrial thermometer provides broad calibration area and distortion-free markings and figures. Rigid brass extruded case has removable fitted cap which, when assembled, offers corrosion resistant, dustproof and rattleproof construction. Scale with large jet black markings on a clear white face combined with magnifying tubing and bright red fluid assures good readability. Standard finish is chrome, with special colors upon request. Made by **Scientific Instrument Co.**, Dept. A, 1041 Second Ave., Detroit 26, Mich.

▲ For more details circle **NED-110 A5** on enclosed inquiry slip ▲

HYDRAULIC JACK & PULLER has separate powered pumping unit



Quick positioning of the ram of Re-Mo-Trol model RP-798CO - 6010 hydraulic jack and puller is made possible by raising and lowering under power. The 60-ton unit has a separate motor powered pumping unit operable on 115 v ac-dc. Jack has a 10-in. travel. Simplex "Center-Hole" in ram permits pulling without using back-up devices to eliminate off-center torque. Ram is also available with a remote hydraulic hand pump instead of the motorized unit. This model raises the ram at high speed when positioning, then automatically shifts to low speed when full power is required. Made by **Templeton, Kenly & Co.**, 2557 Gardner Rd., Broadview, Ill.

▲ For more details circle **NED-111 A5** on enclosed inquiry slip ▲

Another outstanding example for INFRALITE Radiant Heating Lamps is this installation at a leading leather manufacturers plant. This was accomplished by the use of only fifteen 3000 watt radiant heating lamps.

If your problem involves—
• DRYING INKS, POWDERS, PAINTS ETC. • CURING PLASTICS • BAKING VARNISH • PASTEURIZING METALS or any of hundreds of other applications

AND IF YOU NOW USE—
AIR DRYING—GAS, OIL OR ELECTRIC HEAT

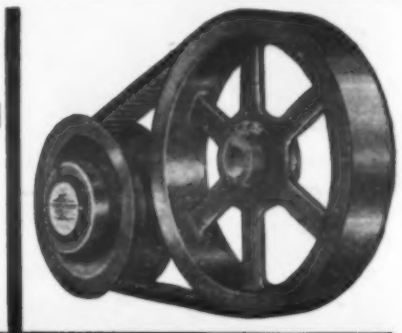
You will be amazed by the increased quality control and big savings in money, time and labor when you use INFRALITE RADIANT HEAT.

WITHOUT OBLIGATION—Ask our Representative to call, or Write for Bulletin 55.

N. J. THERMEX COMPANY, INC.
535 Bergen Street, Harrison, N. J. HU 5-2323

▲ For more details circle **NED-112 A5** on enclosed inquiry slip ▲

where minute speed adjustment is needed, specify....



Wood's VARIABLE SPEED DRIVE

Here's an economical variable speed drive that can be adjusted for infinitely variable speed within its range. By simply turning an adjusting screw on either side of the variable pitch sheave, both flanges move simultaneously and speed changes are obtained quickly and easily.

Positive clamping of the two adjustable flanges eliminates fretting corrosion. Single wide range belt for motors 5 to 20 horsepower provides speed range ratios up to 3 to 1 . . . no lubrication . . . less shaft overhang . . . sensibly priced and economical in operation . . . send for Bulletin 796 for detailed information.

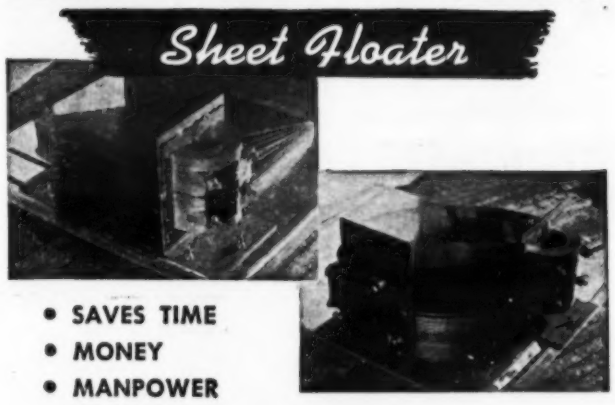
T. B. Wood's SONS COMPANY
CHAMBERSBURG, PA.
Mechanical Power Transmission Manufacturers—Since 1857.

CAMBRIDGE, MASS., NEWARK, N. J., CLEVELAND, OHIO

▲ For more details circle **NED-113 A5** on enclosed inquiry slip ▲

SPEED UP SHEET STEEL HANDLING *with the* VERSON

Sheet Floater



- SAVES TIME
- MONEY
- MANPOWER

The Verson Sheet Floater quickly and economically separates steel sheets and blanks for feeding presses, brakes, shears, etc. It magnetically separates the sheets—causes them to fan out for easy grasping. Feeding is speeded up, danger of cuts and lacerations to workers' hands is reduced, and the possibility of die damage due to feeding more than one piece is minimized. The Sheet Separator can be used for rectangular, round and most odd shaped pieces. It is especially helpful on oily or burred steel that tends to nest when stacked. Two Types in Four Sizes—Write for descriptive bulletin and prices.

A Verson Press for every job from 60 tons up.

Verson — VERSON ALLSTEEL PRESS CO.
9329 S. Kenwood Ave., Chicago 19, Ill. So Lamar at Ledbetter Dr., Dallas, Texas

▲ For more details circle **NED-114 A5** on enclosed inquiry slip ▲

Now... leakproof coupling by hand in Rego* GX welding torch

Now Rego tip and mixer can be tightly coupled to Rego GX Torch handle simply by a twist of the hands, thanks to new gas-tight neoprene seating rings. These tough, long-wearing gasket-type rings form a perfect seal. They take all the abuse. Dust and sand in air won't harm metal seating surfaces or break gas-tight seal. Eliminates costly periodic re-seating of torch heads, gives longer torch life. Rego KXA Cutting *Attachment* can similarly be attached with hand tightening.

*T.M. of the B. B. Co. Chicago

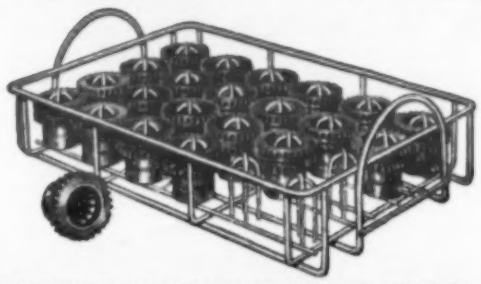
Branches and dealers from coast to coast

Copyright 1954, National Cylinder Gas Company

NCG® National Cylinder Gas Company
840 N. Michigan Ave., Chicago 11, Illinois

▲ For more details circle **NED-115 A5** on enclosed inquiry slip ▲

EEZY-STAK BASKETS
for Better Parts Handling



EEZY-STAK BASKETS SIMPLIFY PARTS HANDLING...CUT COSTS...REDUCE REJECTS!

WIPCO manufactures a complete line of Custom-Designed stacking (Eezy-Stak) and non-stacking baskets for handling all types of parts through every production and assembly process. WIPCO baskets can be made in any desired size or shape, and from any practical material.

Eezy-Stak baskets feature the exclusive Interlock Handle* which permits easy and safe stacking. Eezy-Staks are available in a wide range of standard sizes and metals which fit most parts-handling requirements. Write today for Bulletin B-54.

*Pat. No. 2646186

WIPCO BASKETS... *FROM INITIAL MACHINING TO FINAL ASSEMBLY AND SHIPPING*

WIRE AND IRON PRODUCTS INC.

1727 SIXTEENTH ST. • DETROIT 16, MICHIGAN

▲ For more details circle **NED-116 A5** on enclosed inquiry slip ▲

---

for leak-proof face-to-face sealing

it's the Dyna-seal® by PRECISION

Thoroughly proved sealing by a resilient synthetic rubber, flared component bonded to the inner circumference of a steel washer. Ideal for sealing bolt heads, rivets, flanges, circular flat surfaces—no groove necessary. Seals water, petroleum products, fluids and gases, all pressures.

Everyone is finding *Precision* a most reliable source for help on all sealing problems. Write today!

FREE Handbook of Dyna-seal data! ▶

Also producers of famous *Precision* "O" Rings for thousands of sealing applications. Largest range of "O" Ring sizes available.

Precision Rubber Products Corp.
Dept. 7, Oakridge Drive • Dayton 7, Ohio

Canadian Plant at: Ste. Thérèse de Blainville, Québec

▲ For more details circle **NED-117 A5** on enclosed inquiry slip ▲

ASK YOUR DISTRIBUTOR ABOUT:

The BIG WHEEL...
In The Time Savings Department

Actually, your distributor has more than one "big wheel" to help you achieve finishing savings as much as 50%! Ask him about Brightboy, the "Big Wheel" in time-saving stock grains and textures "matched" for jobs where savings count most.

Rubber-cushioned Brightboy is available in either aluminum oxide or silicon carbide grain AND—Each of these uniform texture combinations comes in GRAIN SIZES ranging from EXTRA FINE to EXTRA COARSE in SOFT, FIRM and TOUGH RUBBER BINDERS. QUICK DELIVERIES from your distributor.

BRIGHTBOY INDUSTRIAL DIVISION
WELDON ROBERTS RUBBER CO.
95 North 13th Street, Newark 7, N.J.

America's Pioneer Manufacturer of Rubber-Bonded Abrasives.

WELDON ROBERTS **Brightboy** RUBBER CUSHIONED ABRASIVES

▲ For more details circle **NED-118 A5** on enclosed inquiry slip ▲

PHOTOELECTRIC CONTROL
has 2 to 30-ft operating range

Applications where light beam is 100 per cent interrupted can be equipped with this improved photoelectric control unit. It requires minimum light of 20 foot-candles, with 0.06-second minimum phototube dark time and 0.06-second minimum light time. Plate relay is energized when light beam is interrupted. Relay contacts are rated 5 amp at 115 v ac. Splashproof cast aluminum case measures 3½ x 3 15/16 x 5¼ in. and lens is mounted in pliable neoprene. It is available with suitable light sources for operating over distances from 2 to 30 ft. Made by **Autotron Co.**, P. O. Box 722-D, Danville, Ill.

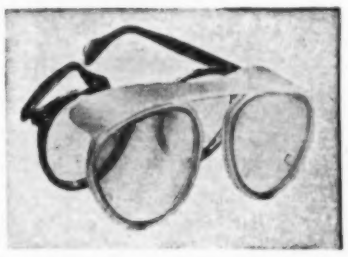
▲ For more details circle **NED-119 A5** on enclosed inquiry slip ▲

TIME RECORDER
slight pressure trips operating bar

Time can be printed on the edge of any material, flimsy tissue or heavy card stock by the model 3871 finger-tip operated time recorder. Carbon copies can be made. Unit is one-hand operated by slight pressure on the registering bar. Other features include rust resistant parts, large motor and self-reversing ribbon. An automatic model is also available. Made by **Lathem Time Recorder Co.**, 90 Third St. N. E., Altanta, Ga.

▲ For more details circle **NED-120 A5** on enclosed inquiry slip ▲

CLIP-ON SAFETY GLASSES
snap on prescription frames

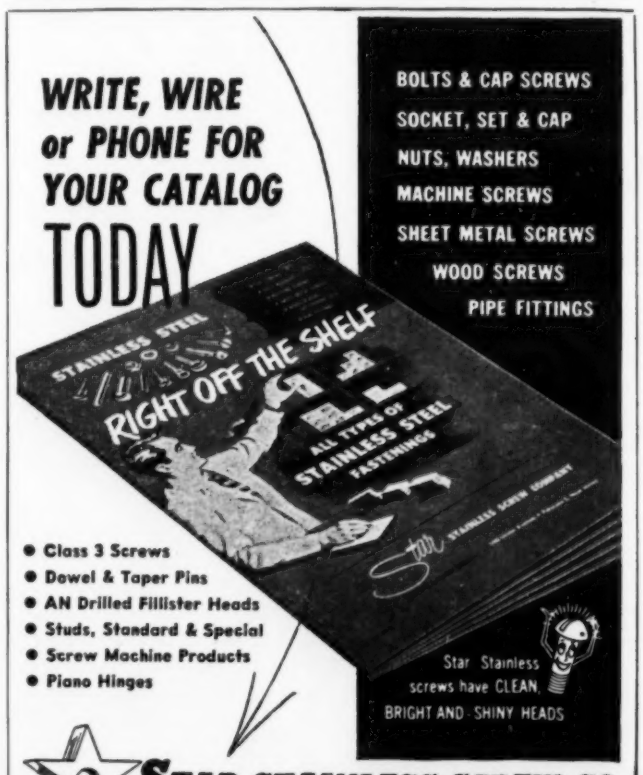


Shatterproof lenses in an unbreakable frame of resilient polyethylene are used in Tuc-Over safety glasses that snap on prescription frames. Plastic clips hold the lightweight glasses in place and do not scratch frame or lenses. Visor extends back to forehead to block out dust, perspiration and glare. Tuc-Overs are made in two sizes with 0.080-in. thick optically perfect shatterproof methacrylate Eye-Saver lenses. Light or medium green lenses can be changed without tools. Made by **Watchemoket Optical Co.**, Dept. N31, 232 W. Exchange St., Providence 3, R. I.

▲ For more details circle **NED-121 A5** on enclosed inquiry slip ▲

WRITE, WIRE or PHONE FOR YOUR CATALOG TODAY

BOLTS & CAP SCREWS
SOCKET, SET & CAP
NUTS, WASHERS
MACHINE SCREWS
SHEET METAL SCREWS
WOOD SCREWS
PIPE FITTINGS



- Class 3 Screws
- Dowel & Taper Pins
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- Studs, Standard & Special
- Screw Machine Products
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Star Stainless screws have CLEAN, BRIGHT AND SHINY HEADS

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Direct New York 'phone: Wisconsin 7-9041

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5411

"ONE MAN CREW"

When you see PORTELVATOR (R) (the handy Hamilton portable elevating table) doing the lifting and moving jobs which previously required the combined strength of three or more husky men you will know why so many present users call it a "one man crew."

(Prices start at $155.00*)
Get one—and start it to work in *your* operation.

WANT THE COMPLETE FACTS? Write for Bulletin No. 5411—Address The Hamilton Tool Company, 901 Hanover Street, Hamilton, Ohio.

IT'S A **Hamilton Tool** "USE IT WITH CONFIDENCE"

*Prices subject to change without notice.

▲ For more details circle **NED-123 A5** on enclosed inquiry slip ▲

Progressing cavities (A) form as rotor (B) turns within stator (C). This model is standard equipment on the Bendix Economat Washer.

Got a pumping problem?

TRY THE PROBLEM-SOLVING MOYNO® PUMP!

Yes, this amazing pump is the best friend a man with a pumping problem ever had! It's like no other pump: as the illustration above shows, the Moyno pump actually works on the principle of a high-speed, precision screw-conveyor. Progressing cavities, formed by a machined rotor turning inside a synthetic rubber stator, give you positive displacement.

These cavities move smoothly: they don't squeeze the material ... they can't stick or gum up. In addition to liquids and pastes, Moynos successfully pump such varied and unlikely materials as potato salad ... clay ... abrasive-laden slurries ... chow mein!

More brief facts about the Moyno

Moynos are available to pull up to 29" of vacuum while discharging under pressure. Big Moynos pump up to 250 gpm, pressures to 600 psi. Pump equally well in either direction.

Won't churn ... won't foam ... won't aerate or vapor-lock. Only one moving part. No valves or pistons to cause trouble.

These Moyno features may help solve *your* pumping problem. If the material you handle will go through pipe, find out more about the world's most versatile pump!

Industrial-type Moyno ... suitable for application on heavy hydraulic machinery ... or in materials- or food-handling processes.

ROBBINS & MYERS, INC.
SPRINGFIELD 99, OHIO • BRANTFORD, ONTARIO

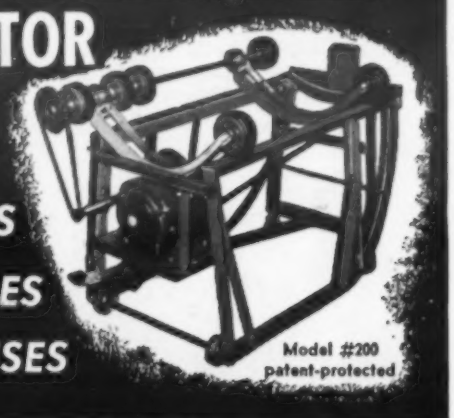
Mail Coupon for Free Booklet

Robbins & Myers, Inc. ND-15
Pump Division, Springfield 99, Ohio
Please send Bulletin 30C, showing more details on construction and operation of Moyno Pumps.

Name _____ *Title* _____
Company _____
Address _____
City _____ *State* _____

▲ For more details circle **NED-124 A5** on enclosed inquiry slip ▲

inexpensive MORSE portable
ROTATOR



• MIXES
• BLENDS
• TUMBLES
• CLEANSES

In 30 to 55 gal. drums, 1 to 5 gal. cans at rotating speeds 10 to 40 rpm. The four drive-wheels have Neoprene treads, resistant to paint and oil. The idler wheels have Torrington Needle Bearings for smoother operation. Easily loaded—frame has retractable casters. Various speeds are secured through chain sprocket reduction. Morse Model #200 Rotator weighs 115 lb. Write for Bulletin 348 and free folder showing complete Morse line or Drum and Barrel Handling Equipment.

MORSE MANUFACTURING CO. INC.
756 West Manlius St. East Syracuse, N. Y.

▲ For more details circle NED-125 A5 on enclosed inquiry slip ▲

exclusive
REULAND
"Xpandable" design

typical adaptations from this BASIC DESIGN

combines motors brakes • fluid couplings gear-reducers into tailor-made single-unit POWER PACKAGES!

GREATER COMPACTNESS...
one service responsibility!

Instead of buying and aligning several separate units, install Reuland *tailor-made, single-unit Power Packages*. You save space and weight, reduce prices up to 25%—simplify installation—improve in-the-field performance.

Literally dozens of combinations are available to fit every powering job. All economical, *standard assemblies* using the basic Reuland "XPANDABLE" motor design.

If your equipment utilizes a motor; brake, fluid coupling, gear reducer (or any combination) why not find out first-hand what a Reuland Power Package can do for you. Give us the details and we'll even submit a "tailor-made" test unit on approval.

OVER 800 "SPECIAL" ELECTRIC MOTOR DESIGNS...
Still further versatility is provided by the Reuland "Library of Specials." Over 800 motors with special electrical and mechanical characteristics... 800 ways you can save development work, get in production faster!

Write today, outlining your particular power problem. No obligation, of course.

REULAND ELECTRIC COMPANY
Distributors in all principal cities

WESTERN DIVISION: Alhambra, California • EASTERN DIVISION: Howell, Michigan

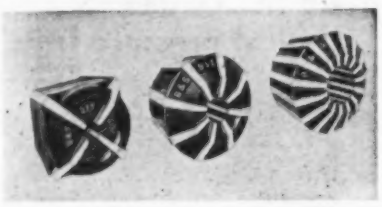
▲ For more details circle NED-126 A5 on enclosed inquiry slip ▲

HEAVY DUTY CASTERS
double ball bearing swivel plate

Loads up to 1500 lb per wheel can be carried by H-900 series of heavy duty 8-in. diameter casters. Five types of soft and hard tread wheels are offered. The double ball bearing swivel plate casters can be used with H-9700 series rigid casters which have the same capacity and wheel treads. Made by **Faultless Caster Corp.**, Dept. NED, 1521 N. Garvin St., Evansville, Ind.

▲ For more details circle NED-127 A5 on enclosed inquiry slip ▲

SCREW MACHINE COLLETS
rubber type have 0.050-in. range

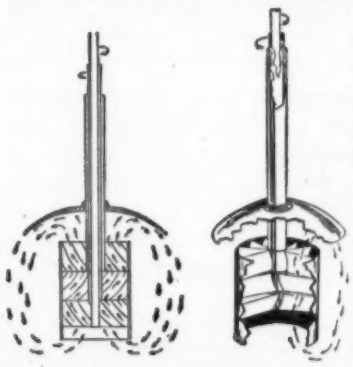


Set of thirteen Rubber-Flex collets for Brown & Sharpe No. O, and OG automatic screw machines and No. O hand screw machines covers spindle capacity from 0.100 to 0.750-in. Each has a nominal range of 0.050-in., obviating need for a separate collet for each size of round stock. Each collet requires a chuck nut and two chuck sleeves to deliver its entire capacity range. Rubber-Flex construction provides close concentricity and gripping power, yet releases instantly. Collets have steel inserts imbedded in rubber and are suitable for round stock only and for second operation work where length of piece inserted in the collet utilizes full collet surface. Made by Jacobs Mfg. Co. and available from **Brown & Sharpe Mfg. Co.**, Dept. 43, Providence 1, R. I.

▲ For more details circle NED-128 A5 on enclosed inquiry slip ▲

PORTABLE MIXER
for viscous liquids and pastes

Two impellers and stator spaced closely together comprise the Shear-Flow portable mixer for viscous liquids and pastes and dispersion of such products as inks, paint, plastics and gums. Impellers turn in opposite directions to create a pumping action which moves the material from the bottom upward through the stator vanes. Resulting shearing action breaks up and disperses particles present. Diagrams illustrate basic principle. Made by **E. Horton & Son Co.**, Gabb Special Products Div., 1800 Lynch St., Windsor Locks, Conn.



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ELECTRIC FORK TRUCK
has elevating power conveyor

With side loading and unloading attachment incorporated on this electric fork truck it is possible to place material in racks and remove it without turning truck in the aisle. Combination of elevating power-driven roller conveyor and side-shifter facilitates transferring long loads such as cartons and lumber directly into roller-equipped storage racks. Rollers of 76-in. long conveyors are rubber covered and are 24½ in. long. Thus, unit loads up to 70 x 24 in. weighing 500 lb or more can be handled by truck. All rollers are driven by drive chain, connected to hydraulic motor run from central hydraulic system. Hydraulically-driven side shifter moves conveyor 7½ in. either side of center. Made by **Lewis-Shepard Products, Inc.**, Dept. R-67, 125 Walnut St., Watertown 72, Mass.

▲ For more details circle NED-130 A5 on enclosed inquiry slip ▲

How to reduce materials-handling costs!

Did you know you can get Cargotainers® "Duty-Designed" for your particular products? Cargotainers are now working for some of America's largest manufacturers handling everything from auto parts, thread, smoked ham, plastic, electrical equipment—yes, even to the U. S. mail. Cargotainers pay for themselves quickly because they reduce damage to merchandise and equipment, double storage space, speed production, save labor.

A new 24-page illustrated manual has just been published. Regardless of the type or kind of products you make, you should have a copy. It's yours for the asking. **Pittsburgh Steel Products Company, 1407 Grant Building, Pittsburgh 30, Pennsylvania.**

▲ For more details circle NED-131 A5 on enclosed inquiry slip ▲

SAVES HANDS FROM DERMATITIS
CLEANS SKIN ON THE JOB

Hammons WATERLESS CLEANER

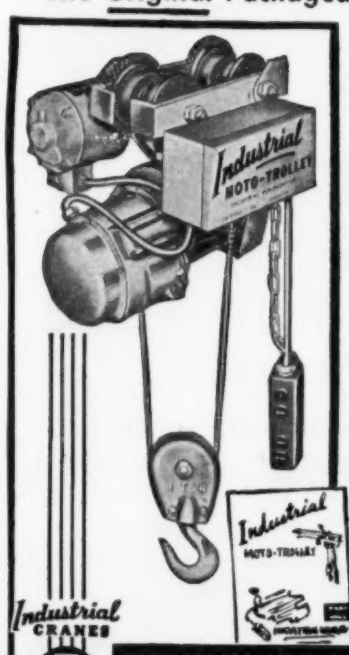
GETS ALL THE DIRT

HAMMONS DISPENSER gives 60-second cleaning AT THE WORK AREA instead of 6 minutes in plant washroom! Removes shop dirt, paint, grease, Perma-tex, etc. Contains U.S.P. grade lanolin, glycerin and hexychlorophene to guard against dermatitis.

HAMMONS PRODUCTS, INC.
1141 W. WILDWOOD, FORT WAYNE 6, IND.

▲ For more details circle NED-132 A5 on enclosed inquiry slip ▲

Industrial MOTO-TROLLEY
The Original Packaged Motor Driven Trolley



MAY BE ATTACHED TO YOUR STANDARD ELECTRIC HOIST . . .

Adjustable to Accommodate Wide Variety of Beam Sizes

- Crown-tread machine steel wheels with hardened drivers.
- Each wheel equipped with double-row precision ball bearings and removable-head axle with Alemite grease fittings.
- Powered by a crane-duty high-torque totally enclosed motor of 30 minute 55 degree rating.
- Magnetic contact panel has transformer to reduce voltage in single speed push button control circuit.
- 4-button control station operates single speed trolley and hoist motions.

Write for Literature

Industrial CRANES

INDUSTRIAL CRANE & HOIST CORPORATION
1527 SOUTH PAULINA STREET CHICAGO 8, ILLINOIS
Overhead Cranes • Jib Cranes • Monorail Systems
Crane Runways
Representatives in Principal Cities

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-AT NEW LOW PRICES!

Manufacturing economies permit price reductions as much as 25% on Rivett air cylinders. These have the same quality features which are providing thousands of customers with smooth, steady performance.

Pressures to 150 P.S.I.; 7 mountings; strokes to 96"; single or double-end rods, internal or external thread; cushioned either end.

RIVETT LATHE & GRINDER, Inc., Brighton 35, Boston, Mass.

Write Dept. NED-1 for new Price List and Catalog No. 55

RIVETT furnishes a complete power package

VALVES • CYLINDERS • POWER UNITS

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ENGINEERED PHILLIPS SERVICE

PHILLIPS

POWER TOOL MANUFACTURER CLEANS METAL PARTS BETTER, FASTER WITH A PHILLIPS DEGREASER

Skilsaw reports improved cleaning before painting and assembly.

Above: Metal parts are cleaned in Phillips Model 60 degreaser. Inset shows parts after degreasing.

HERE is another case illustrating the high cleaning efficiency of Phillips degreasers. Skilsaw, Inc., Chicago, uses a Phillips Model 60 electric batch-type machine to clean both aluminum and iron castings, steel stampings, shafts and screw machine parts before painting and assembly of the finished product.

Skilsaw reports that the Phillips unit cleans their parts better, as well as 3 to 4 times faster than their former method.

Check into the time and money you can save with Phillips Vapor Degreasing. Our representative will be glad to discuss your parts cleaning problem with you.

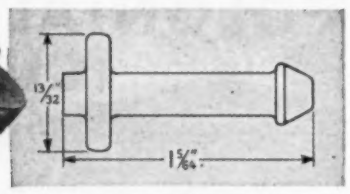
SEND FOR YOUR FREE COPY OF NEW ILLUSTRATED DEGREASER BULLETIN!

Phillips 3463 Touhy Avenue • Chicago 45, Illinois
MANUFACTURING COMPANY

"In Canada Phillips equipment is manufactured under license by Williams Tool Corp. of Canada, Ltd., Brantford, Ont."

▲ For more details circle **NED-135 A5** on enclosed inquiry slip ▲

Hassall



This cost:

SCREW MACHINE	$14.00 per thousand
COLD HEADED	$5.20 per thousand
SAVING	$8.80 per thousand

How about your fasteners or small parts? Have you had an estimate from HASSALL?

This is a typical example of how HASSALL saves thousands of dollars for cost-conscious manufacturers in hundreds of industries. This part is made in one piece by cold heading . . . the part is not only lower in cost but also stronger and just as accurate. Savings amount to $8.80 per thousand and this manufacturer used hundreds of thousands a year!

Perhaps your parts can be made by this better, lower cost method. Send samples or sketches of your parts for a prompt, $ $ $ saving quotation.

HASSALL SERVICE

• Send for 3 color decimal equivalent wall chart.
• On request, our 36-page catalog.

JOHN HASSALL, INC.
P. O. Box 2178, Westbury, Long Island, N. Y.

▲ For more details circle **NED-136 A5** on enclosed inquiry slip ▲

WEIGHT-COUNT EQUIPMENT prints any count up to 9999

Only a few seconds are required to count hundreds of parts accurately, then print both weight and count, with the Printweigh weight - count system for Toledo Printweigh bench, portable, floor and built-in counting scales. Any count up to 9999 can be printed, simultaneously with weight figure, by counting scales equipped with selective numbering equipment. Made by **Toledo Scale Co.**, Telegraph Rd., Toledo 1, O.

▲ For more details circle **NED-137 A5** on enclosed inquiry slip ▲

CENTRIFUGAL CLUTCH for V-belt, sprocket or direct drive

Only moving parts of the automatic spider - type clutch for up to 3½-hp gasoline engine powered products are four friction segments riding on a rubber spider and held in position by a garter spring. Self - energizing unit has a stamped steel housing, with half of pulley serving as part of the housing. Adaptable to V-belt, sprocket or direct coupling drive, the clutch is operated by centrifugal force controlled by engine throttle. Operation can be in either direction. Made by **Automatic Steel Products, Inc.**, Mercury Clutch Div., 1251 Camden Ave. S. W., Canton 6, O.

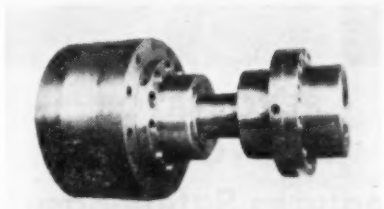
▲ For more details circle **NED-138 A5** on enclosed inquiry slip ▲

CORRECTIVE SAFETY SPECTACLES have shatterproof lenses

Color styling of frames plus shatterproof Optilite corrective lenses are features of these lightweight modern - style safety spectacles. Lenses meet all specifications for optical accuracy and light transmission. Corrections can be had for up to plus or minus 4.00D sphere in combination with cylinders up to plus 2.00D. Bifocals are also available in these distance powers which add from plus 1.00 to plus 3.00. Segment form is 22-mm round, one-piece construction. All lenses are made on corrected curves, and can be had in white, No. 1 and 2 rose, and No. 1, 2 and 3 green. Made by **United States Safety Service Co.**, Dept. S, 1215 McGee St., Kansas City 6, Mo.

▲ For more details circle **NED-139 A5** on enclosed inquiry slip ▲

OVER-RUNNING COUPLINGS designed for boiler fan drives



Over-running mechanism is combined with floating shaft flexible member in types 95 and 96 automatic over-running couplings. Latter member compensates for both parallel and angular alignment errors without imposing excessive load on bearings in clutch. Both types will accommodate end float, while type 96 is constructed with special clearance to allow unusual amount of axial expansion. Coupling is designed for boiler fan drives where hot gases cause expansion and misalignment, or for installations where supporting members are subject to deflections affecting shaft alignment. Floating shaft assembly can be lifted out for servicing. Capacities range from 1.2 to 197 hp at 100 rpm. Made by **Hilliard Corp.**, 40 W. Fourth St., Elmira, N. Y.

▲ For more details circle **NED-140 A5** on enclosed inquiry slip ▲

5413

PRECISION

SMALL HOLE DRILLING

Should always be done on the

HAMILTON VARIMATIC®

STURDY
BENCH TYPE
VARIABLE SPEED
SUPER SENSITIVE
PRECISE

For complete information write for our FREE Bulletin No. 5413. Address The Hamilton Tool Company, 901 Hanover Street, Hamilton, Ohio.

IT'S A Hamilton Tool
USE IT WITH CONFIDENCE

▲ For more details circle **NED-141 A5** on enclosed inquiry slip ▲

and make your own coat and pants to match?

When you buy a strip heating unit alone, *that's like buying just the vest for a suit of clothes you need.*

When you design the heating tank and figure out your own installation, that's like making your own coat and pants.

Today, the difference between a homemade compound melting installation and an efficient professionally engineered Sta-Warm unit equals the difference between a car with two wheel brakes and fresh air top . . . and 1955 sleek sport models.

For more than 30 years, Sta-Warm has developed a very *broad* experience in the very *specialized* field of designing and building equipment for melting, storing, conveying and dispensing compounds, soft metals, adhesives and thermoplastics which must be heated to become useful in industrial production. We supply *the whole suit,* vest and coat and pants to match.

A list of Sta-Warm users reads like the Blue Bool of American Industry . . . which fact suggests that "THE STA-WARM METHOD" meets the approval of America's top production engineers.

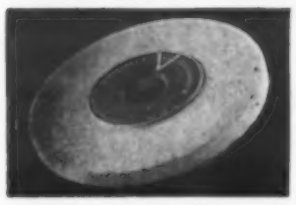
If you want to "up-grade" the efficiency of your compound melting processes, why not ask Sta-Warm to help you? Write today, outlining your problem. No obligation.

Sta-Warm ELECTRIC CO.
130 N. CHESTNUT ST., RAVENNA, OHIO

▲ For more details circle **NED-142 A5** on enclosed inquiry slip ▲

NEW V40 BOND TOOL ROOM WHEELS

Superior form-holding qualities plus faster, cooler cutting



A complete line of aluminum oxide wheels for tool room grinding, just announced by THE CARBORUNDUM COMPANY, features a new vitrified bond designated as V40. Wheel structure and bond are combined to give V40 Bond Wheels superior form-holding ability that insures longer wheel life and decreases the frequency of dressing. Yet despite the inherent strength of the bond, its composition is such that it permits easier, faster dressing of the wheel when required.

The sharp, white aluminum oxide abrasive grain is faster cutting—speeds up all tool room grinding. And V40 Bond Wheels grind exceptionally cool, even on die steels and high speed tool steels. Heavy infeeds can be taken without burning the stock or overheating the tool.

Tests conducted under toughest tool room grinding conditions all over the country prove the new V40 Bond Wheels superior to all other tool room wheels now in use.

V40 Bond Wheels, easily identified by the V40 on the bright red blotter, are available in types to meet every tool room grinding operation. They are easy to order... match your present wheel specifications grit for grit and grade for grade.

FOR A FREE DEMONSTRATION of these outstanding new V40 Bond Wheels in your own shop, call your CARBORUNDUM Distributor or Salesman (listed in the yellow pages under "Abrasives" or "Grinding Wheels"). Or, if you prefer, use the inquiry card provided by this publication; or write **The Carborundum Company,** Dept. NED 81-413, Niagara Falls, New York.

"Carborundum" is a registered trademark of The Carborundum Company, Niagara Falls, New York.

81-413

▲ For more details circle **NED-149 A5** on enclosed inquiry slip ▲

▲ For more details circle **NED-150 A5** on enclosed inquiry slip ▲

▲ For more details circle **NED-151 A5** on enclosed inquiry slip ▲

PORTABLE ELECTRIC DRILL

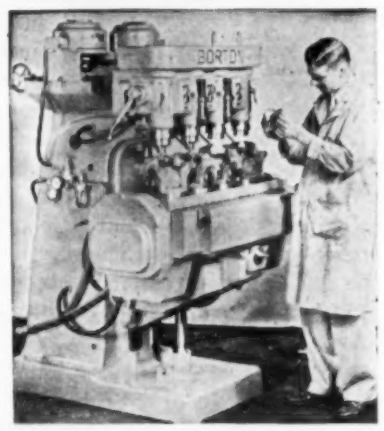
has attachments for diverse uses

Model 137 ¼-in. portable electric drill features a 115-v ac-dc motor, idling speed of 2300 rpm, gear type chuck, trigger switch with push-button locking device, weight of 2¾ lb, 7-ft anti-twist electric cord and self-lubricating bronze and steel ball bearings. Attachments include high speed twist drills for wood, steel and other metals, plastics and composition board; abrasive disks for sanding wood or metal or removing paint and varnish; wire brush for removing rust; bracket and grinding wheel for conversion into an electric bench grinder; 5-in. lamb's wool bonnet for waxing and polishing; and cloth buff for polishing metal. Model 5009 vertical drill stand converts tool into a drill press. Drill is offered by itself or in kit form with the above attachments in a steel carrying case. Made by **Porter-Cable Machine Co.,** 52 Exchange St., Syracuse 8, N. Y.

▲ For more details circle **NED-152 A5** on enclosed inquiry slip ▲

FOUR-SPINDLE DUPLICATOR

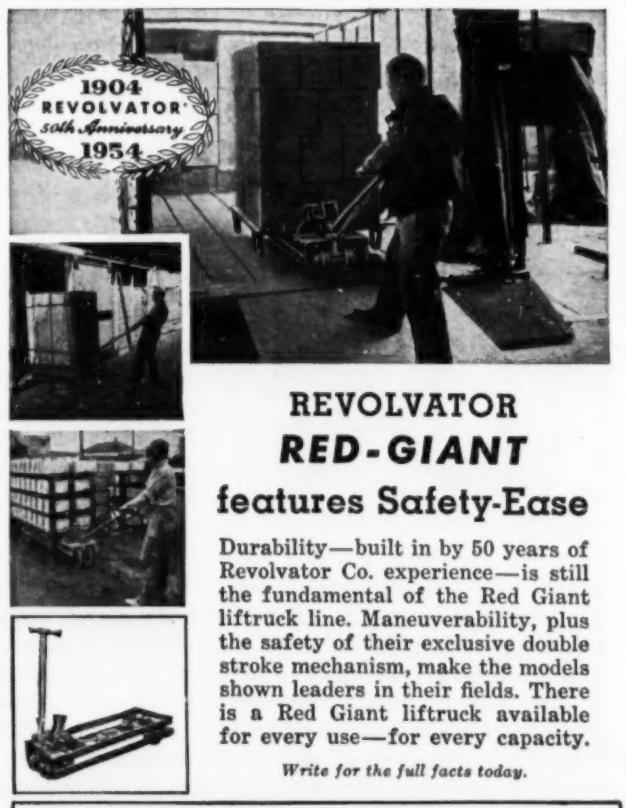
two pairs of fixtures controlled by separate master templates



Designed to profile internal or external surfaces, or to groove and rout piece parts at high production rate, this four-spindle rotary duplicator has high repetitive accuracy. As shown in illustration, two heads are in operating position while the other two are idle during unloading, gaging and loading. Heads and rotating fixtures operate in pairs, each pair of fixtures being governed by a separate master. Two masters, one for each pair of fixtures, are positioned within the table assembly. Thus, each pair of spindles can perform a different operation, if desired.

After cutter spindles have been set for the required cutting depth, fixtures holding the work by air-operated clamps rotate and move in and out from column face, guided by the masters. All movements are protected by electrical interlocks. Variations of this machine can be designed with more spindles and more range, with or without variable down feed. Made by **George Gorton Machine Co.,** 1321-BB Racine St., Racine, Wis.

▲ For more details circle **NED-153 A5** on enclosed inquiry slip ▲



▲ For more details circle **NED-154 A5** on enclosed inquiry slip ▲

▲ For more details circle **NED-155 A5** on enclosed inquiry slip ▲

▲ For more details circle **NED-156 A5** on enclosed inquiry slip ▲

▲ For more details circle **NED-157 A5** on enclosed inquiry slip ▲

DUSTKOP STOPS DUST

DUST COLLECTORS

SAVES INSTALLATION TIME

Stop dust quickly, at lower cost, with Dustkop. Thirty-seven standard models *ready to use* and available from stock. Dustkop conserves floor space, reduces maintenance. Collects almost all types of industrial dusts. Write for descriptive literature.

Also a complete line of Mist Collectors

AGET MANUFACTURING COMPANY
1396 East Church St. • Adrian, Michigan

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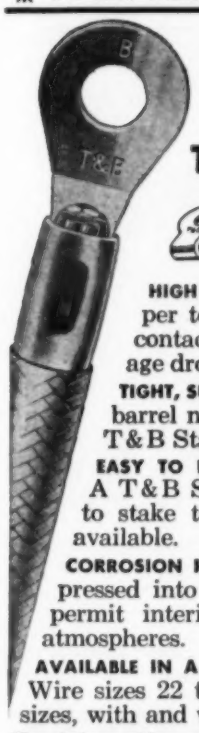

5 reasons why you should specify T&B Sta-kon® Terminals

HIGH CONDUCTIVITY... Pure electrolytic copper tongue. Long stake mark assures large contact area for low resistance and low voltage drop.

TIGHT, SURE CONNECTIONS... Serrated tongue and barrel never relax grip on cable. Once staked, T&B Sta-kon Terminals are on to stay.

EASY TO INSTALL... without flame, heat or flux. A T&B Shure-Stake hand tool is all you need to stake terminal to cable... bench tools also available.

CORROSION RESISTANT... Cable and barrel are compressed into a solid mass. There are no voids to permit interior attack from corrosive agents or atmospheres.

AVAILABLE IN A COMPLETE LINE... Including "specials". Wire sizes 22 to 4/0. Varied tongue styles and stud sizes, with and without insulation.

For information on the complete line of T & B Sta-kon terminals send for your FREE copy of T & B Bulletin #61 today.

T 321

THE THOMAS & BETTS CO.
INCORPORATED
24 Butler Street, Elizabeth 1, New Jersey
THOMAS & BETTS LTD., MONTREAL, P. Q., CANADA

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for really *ACCURATE* Voltage Regulation

GR® Type 1570-A Automatic Voltage Regulator

Holds Voltage Output Constant to ±0.25%
Extra Fast Response of 0.1 Sec. per Volt
Handles up to 50 Amps. (6 KVA)

Consists of a VARIAC® continuously-adjustable autotransformer, a servomechanism circuit which samples output voltage and a servo-motor which drives the VARIAC to correct for line variations. For really ACCURATE line voltage regulation this is the answer.

Type 1570-ALM (115 v) or Type 1570-AHM (230 v) Automatic Voltage Regulator $470.00

Write for the July 1954 G-R EXPERIMENTER for Complete Details

GENERAL RADIO Company
275 Massachusetts Avenue, Cambridge 39, Mass., U.S.A.
8055 13th St., Silver Spring, Md. WASHINGTON, D. C. 90 West St. NEW YORK 6
920 S. Michigan Ave. CHICAGO 5 1000 N. Seward St. LOS ANGELES 38

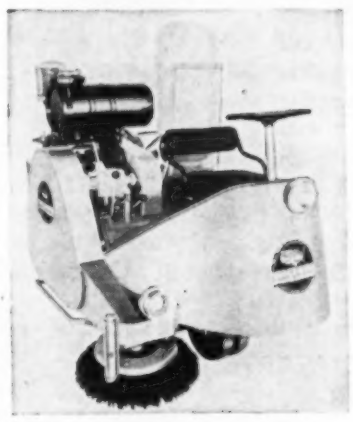
▲ For more details circle **NED-160 A5** on enclosed inquiry slip ▲

PLASTIC CLOSURES
fit on or in pipe and parts

Durable, flexible polyethylene plastic is used in expanded line of CaPlug closures, made in threaded and non-threaded cap and plug types for safeguarding products in process, storage and transit. Over 100 stocked sizes are available in five standardized designs for sealing tubing, fittings, valves, hydraulic components and numerous machined parts. They are effective dust and moisture seals and are being used for masking during dipping, painting and vacuum plating operations. Closures will not chip, collapse, break or shred under severe conditions and retain form stability under stress at temperatures ranging from −94 to 220° F. Folder gives specifications of all types. Free representative assortment of samples is offered by **Protective Closures Co.**, CaPlugs Div., Dept. N, 2209 Elmwood Ave., Buffalo 23, N. Y.

▲ For more details circle **NED-161 A5** on enclosed inquiry slip ▲

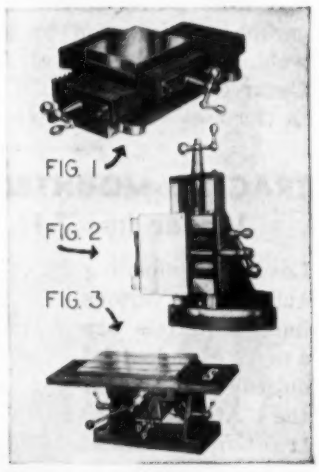
POWER FLOOR SWEEPERS
seven models comprise line



Included in 1955 line of Wilshire power floor sweepers are seven models with sweeping widths of 24, 36 and 48 in. Four of the seven are new models and the others are refined or improved. Illustrated series 1200 Super-Safe multipurpose sweeper is made in 36 and 48-in. widths with shock absorbing automotive type steering gear. Speed selector is in front of the engine and other controls are at the operator's right hand. It features locked ignition, safety guards over pulleys and belts, 8.3 hp self-starting gasoline engine with generator and storage battery and safety guard in front of operator. Made by **Wilshire Power Sweeper Co.**, Dept. A-3, 526 W. Chevy Chase Dr., Glendale 4, Calif.

▲ For more details circle **NED-162 A5** on enclosed inquiry slip ▲

SLIDES, FEEDS & TABLES
numerous design options permit handling of 5 to 2500-lb weights



Single and/or compound traverse types are available in redesigned line of slides, feeds and tables for accommodation of parts weighing from 5 to 2500 lb. Each traverse has crank handle with 10-pitch feed screw, one revolution equaling 0.100-in. travel. Assembly base and/or mounting pad are available with swivel up to 360 degrees. Dovetail slide units have traverses ranging from 5 to 12 in.

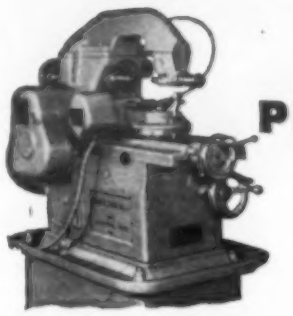
Fig. 1 and 2 show compound feeds. Fig. 2 shows integral angle mounting base and graduated swivel mounting base. Neoprene accordion slide protectors and micrometer dial are optional. Slides are available in many variations of combinations, either single or compound traverse, for flat, vertical or inverted mounting. Fig. 3 shows the 8 x 21-in. precision table with antifriction bearings, dovetail slide and taper gib.

Ways and bearings are protected for use with face or surface grinder using coolant. Table shown tilts 3 degrees above and 30 degrees below horizontal. Fixed horizontal plane table is also available. Travel is 3 in. either side of center, or total of 6 in. Made by **Standard Electrical Tool Co.**, 2488 River Rd., Cincinnati 4, O.

▲ For more details circle **NED-163 A5** on enclosed inquiry slip ▲

5416

CUT COST of PRECISION gear PRODUCTION



THIS FACT has been demonstrated time and time *again*

If you produce small, fine pitch, precision gears, up to 6" O.D. of the gear blank, use of the Hamilton Precision Gear Hobber will enable you to attain more gear precision with no sacrifice in gear production, or increased gear production with no sacrifice in gear precision . . . or both!

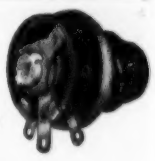
WANT FACTS?

Write for Hamilton Bulletin No. 5416.
Address The Hamilton Tool Company
901 Hanover Street,
Hamilton, Ohio.

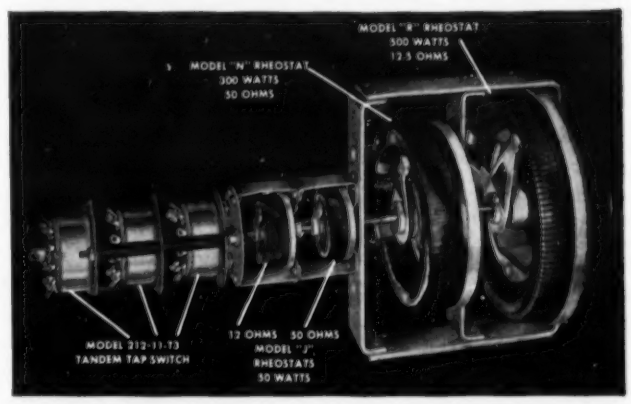
IT'S A *Hamilton Tool*
USE IT WITH CONFIDENCE

▲ For more details circle **NED-164 A5** on enclosed inquiry slip ▲

OHMITE® RHEOSTATS IN *Special Tandem Assemblies*



MADE TO ORDER TO SOLVE YOUR UNUSUAL CONTROL PROBLEMS



The above device was specially developed by Ohmite engineers to solve an unusual control problem—how to test and demonstrate various methods of A-C motor speed regulation *with one-knob control.* The result was a special combination of four standard Ohmite rheostats and three standard Ohmite 11-position switches, all coupled together in tandem, and operated by one knob. Any or all units can be connected in the test circuit or wired in any desired fashion. This is only one of innumerable combinations of rheostats, resistors, and tap switches that Ohmite can engineer for special jobs. Why don't you consult Ohmite about your own special control problems.

Write on Company Letterhead for Catalog and Engineering Manual No. 40

OHMITE MANUFACTURING CO.
3620 Howard St., Skokie, Ill.
(Suburb of Chicago)

Be Right with **OHMITE**

RHEOSTATS • RESISTORS • TAP SWITCHES

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FREE
LAYOUT SERVICE for all storage needs

Trained Equipto engineers will lay out your storage facilities . . . suggest the number and types of units you will need . . . assure maximum use of every inch of floor space . . . increase working efficiency by expert arrangement of units. Take advantage of this free service. Ask our engineer to call, or write for catalog on complete line.

Equipto DIVISION OF AURORA EQUIPMENT CO.
690 Prairie Ave., Aurora, Illinois
Steel Shelving . . . Parts Bins . . . Drawer Units

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NEW CUP BRUSHES. *New Osborn Crimped Wire Cup Brushes provide rigorous brushing action.*

ACTION! for faster cleaning

ANOTHER OSBORN DEVELOPMENT TO SPEED BRUSHING

HERE is a harder-working cup brush for cutting your costs! This new Crimped Wire Cup Brush has been developed by Osborn for fast, thorough cleaning of metal surfaces. Here again, Osborn gives you faster brushing action and longer brush life.

For all your brushing needs, specify the brand that is recognized throughout industry for quality and low end-of-service cost. Write for Osborn's handy pocket-size brush guide. *The Osborn Manufacturing Company, Dept. Z-20, 5401 Hamilton Avenue, Cleveland 14, Ohio.*

Osborn Brushes

OSBORN BRUSHING METHODS • POWER, PAINT AND MAINTENANCE BRUSHES
BRUSHING MACHINES • FOUNDRY MOLDING MACHINES

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"Get them from Gillen"

MACHINE KEYS

Standard Gib Head and Plain Taper Keys, Straight and Round End Feather Keys. Precision milled, C-1018 Steel; close tolerances; completely de-burred, ready for assembly.

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MACHINE PARTS

Every shape and size; milled, drilled, tapped, countersunk, counterbored, heat-treated, surface ground, from various metals. Used by leading machinery builders. Precision made, rigid inspection.

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KEYS • PARTS • PINS

GILLEN GROOVE PINS

Just drill hole, Drive in pin. 3 grooves compress pin for tight fit. Stocked many lengths and diameters. For fast, production fastening. Eliminate threading, tapping, reaming. Various metals and finishes.

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TAPER PINS

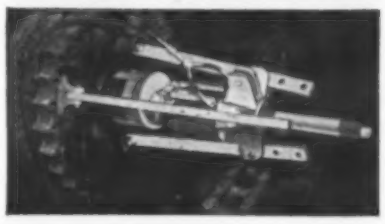
Straight to taper, ¼" per foot. Extremely accurate. Milled from bar stock; also centerless ground. Rust-resistant coating. Stocked many lengths and diameters.

Send for TP Catalog

John Gillen Company Manufacturers
2562 S. 50th AVE., CICERO 50, ILLINOIS

▲ For more details circle NED-168 A5 on enclosed inquiry slip ▲

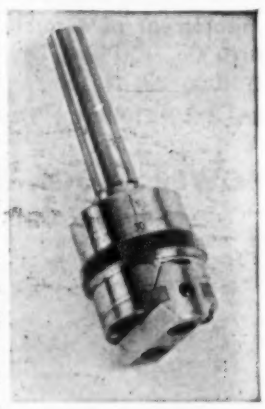
UNIVERSAL SPROCKET PULLER
hydraulic tool rated 100 tons



Pulling and installing sprockets is simple operation with this OTC 100-ton universal sprocket puller. It has ample power to handle even the pulling and installation of drive sprockets of large crawler type tractors. As pressure is increased, gripping lugs automatically grip harder. Power is provided by twin cylinder 100-ton Power-Twin ram which is detachable for use with other attachments or on presses. Either electrically or hand operated hydraulic pumps can be used to actuate the ram. Made by **Owatonna Tool Co.**, 436 N. Cedar St., Owatonna, Minn.

▲ For more details circle NED-169 A5 on enclosed inquiry slip ▲

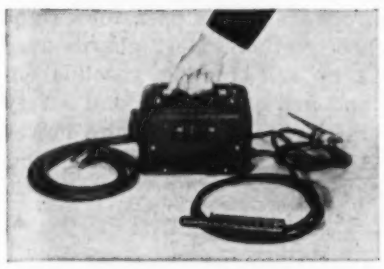
OFFSET BORING HEAD
for boring, facing and threading



Interchangeable shanks available with No. 820 offset boring head make it adaptable for wide variety of applications. The light and medium duty tool for boring, facing and threading operations has a micrometer style adjusting collar with widely spaced graduations. One revolution of collar moves the tool-holding slide bar 0.050-in. radially. Maximum offset capacity with standard slide bar is ¾-in., but this can be increased to 2 in. with a No. 811 bar. All bars accommodate ⅜-in. diameter tool shanks. Boring head length, less shank, is 1⅞ in. Made by **Mico Instrument Co.**, 80D Trowbridge St., Cambridge 38, Mass.

▲ For more details circle NED-170 A5 on enclosed inquiry slip ▲

PORTABLE WELDER
plugs into 110 or 220-v outlet



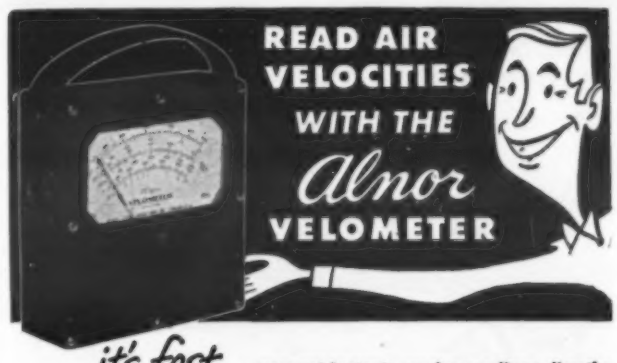
Weighing only 59 lb, Royal Arc 200A hand - carried electric welder is designed for maintenance as well as production welding. It plugs into any 110 or 220-v 60-cycle single - phase outlet and uses any 5/64 to 5/32-in. welding rod. Welding, cutting, brazing, soldering and heating operations can be performed by relatively inexperienced operators. Use of low voltage results in minimum carbon precipitation to minimize brittleness in the weld. Made by **Royal Arc Industries, Inc.**, 425A Cedar St., Chillicothe, Ill.

▲ For more details circle NED-171 A5 on enclosed inquiry slip ▲

TRACTOR-MOUNTED SCOOP
loader has 7-ft 11-in. dump height

Loading, unloading and hauling various bulk materials are among industrial duties for which the Ateco JD-40 tractor - mounted loader is suited. It has a 7-ft 11-in. clearance in dumping with a 2-ft 6-in. reach at maximum height. Designed for mounting on a John Deere 40-C crawler tractor, its hydraulic system features double-acting polished cylinders, chrome piston rods with V-type packing, heavy duty front-mounted pump, dual control valve and large oil reservoir. Same hydraulic system can be used to operate other hydraulically actuated equipment. Loader has a ½-cu yd bucket and can be completely removed in 45 minutes. Payload at ground level is 4300 lb and at full height is 2700 lb. A ¾-yd bucket and 66-in. bulldozer-backfiller blade are also available. Made by **Greenville Steel Car Co.**, Dept. JDL, Greenville, Pa.

▲ For more details circle NED-172 A5 on enclosed inquiry slip ▲



it's fast . . . you get instant, precise readings directly from scale face . . . no need for reference charts or calculations. Measure air flow through ducts, grilles, motors, spray booths, etc., or in the open.

it's accurate . . . brings laboratory standards of air velocity measurement to the production line, mine, mill . . . anywhere. Needs no special care or handling . . . anyone can use it and get accurate results.

it's portable . . . completely self-contained, hand-held. Rugged construction and sturdy case protect the Velometer from usual hazards of portable use. Available in scale ranges to 24,000 f.p.m. Wide selection of jets and fittings assures adaptability of Alnor Velometer to your application. Get full details and prices, write for Bulletin 2448-G. Illinois Testing Laboratories, Inc. Rm. 529, 420 N. La Salle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

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KEEPS 'EM ROLLING!

KESTER FLUX-CORE SOLDER available in 8 fluxes, all in 5 core sizes, assures you of getting a top quality product because of constant solder alloy control and consistent flux formulae. That's why you can depend on Kester to keep production rolling.

WRITE TODAY FOR Kester's NEW 78-Page Informative Textbook "SOLDER . . . Its Fundamentals and Usage."

KESTER SOLDER

COMPANY 4249 Wrightwood Avenue, Chicago 39, Ill.
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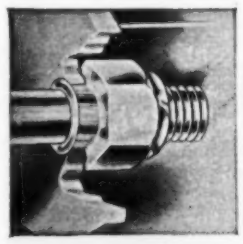
clinch type ELASTIC STOP nuts

for attachment to thin section metal components



- Permanently installed by simple clinching or swaging.
- Self-locking and vibration-proof—because all ESNA Clinch Nuts have the famous red elastic locking collar.
- Permit precise screw adjustments; prevent loosening of component parts.

● **WRITE for design information on Clinch Nuts and other special and standard ESNA fasteners. Address Dept. N35-137.**

ESNA

ELASTIC STOP NUT CORPORATION OF AMERICA
2330 Vauxhall Road, Union, N. J.

DESIGN HEADQUARTERS FOR SELF-LOCKING FASTENERS

▲ For more details circle NED-175 A5 on enclosed inquiry slip ▲

ACCO Quality

Wright Hoists

WRIGHT SAFEWAYS

Right for your rigging and maintenance work

A rigger's hoist made in fourteen capacities ranging from ½-ton to 25 tons. They are fully enclosed, light in weight, compact and rugged. Built to stand wear and abuse because all load-supporting parts are made of steel. Machine-cut, heat-treated alloy steel gears plus ball-and-roller bearings insure long life. Smooth, positive-holding brake.

For further details see your WRIGHT distributor or write our York, Pa., office for Bulletin DH-164-B.

ACCO Wright Hoist Division
AMERICAN CHAIN & CABLE
York, Pa., Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, San Francisco, Bridgeport, Conn.

for Better Values

For more details circle NED-176 A5 on enclosed inquiry slip

BEST SELLING TOOL

LIGHT AS YOU WANT IT
for Machine Tools, Assembly and Inspection Benches

FOSTORIA LOCALITES

FINEST OF ALL LOCAL LIGHTING

MODEL 2-MH-700
Overall length 35"
$7.04 Each in std. pkg. of 8
Less $8.80 ea.

Directs Light Exactly as Needed

Reflector—5" long x 3⅞" wide x 3" deep. Rotates 360°. Accommodates 100 watt A-21 or 60 watt A-19 lamp.

Arm Joints—New patented tension disc design. Easy, smooth action with only one hand. Available with 1, 2 or 3 arms.

Base—Universal for vertical or horizontal mounting. Also adaptable to outlet boxes. Collet revolves 360°.

Wiring — McGill industrial socket 4101-FL with Levolier switch. 8 ft. POT-32 18-2 heavily insulated oil resistant wiring with molded plug.

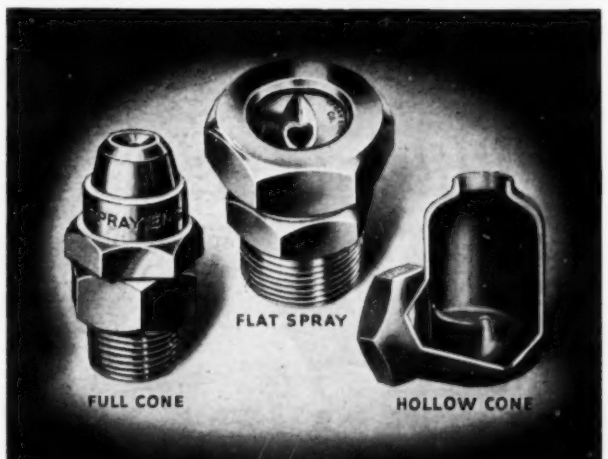
Finish—Gray baked enamel. Reflector interior, high temperature White.

WRITE for complete catalog of Localite models for every industrial use.

THE FOSTORIA PRESSED STEEL CORPORATION
Fostoria, Ohio
Localites available through wholesalers everywhere

LOCALITE fostoria for Light ON the Job

For more details circle NED-177 A5 on enclosed inquiry slip



SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
106 CENTRAL STREET • SOMERVILLE 45, MASS.

For more details circle NED-178 A5 on enclosed inquiry slip

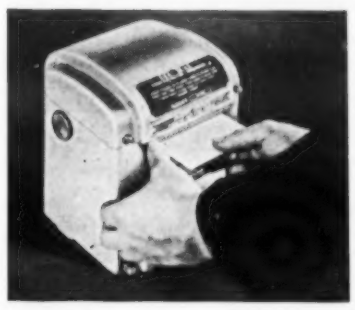
METALWORKING LATHE
11-in. variable speed machine for toolroom and production work

Developed to meet the needs of tool and die shops as well as for general metalworking, 11-in. cabinet model lathe has integral Vari-Speed drive which gives infinite spindle speed in range of 44 to 1550 rpm. Lathe has 24-in. center-to-center capacity, 1⅜-in. hole in spindle and 1-in. collet capacity. Backgear lever at front of machine permits instant drive selection. Spindle speed changes can be made while machine is running.

Quick change feed controls offer instant choice of 48 thread and feed rates with thread range from 4 to 224 and feed rates per revolution from 0.0902 to 0.0016-in. longitudinal and 0.0301 to 0.0005-in. cross. Accessories include taper-turning attachment, micrometer stops, milling attachments and collet chuck. Made by **Rockwell Mfg. Co.**, Delta Power Tool Div. 438 N. Lexington Ave., Pittsburgh 8, Pa.

For more details circle NED-179 A5 on enclosed inquiry slip

TICKET-PRINTING METER
stamps pounds or gallons of liquid delivered to batches or processes



Print-O-Meter liquid meter register automatically stamps a ticket with the number of gallons or pounds of liquid ingredients delivered to a batch or process. It also prints letters and serial numbers on ticket to identify the operator and the batch. Completely recessed in the register of the type S industrial liquid meter, this unit prints tickets with as many carbons as are required.

Ticket is inserted in dust-protected slot and knob is turned. This locks the ticket in the register to prevent tampering, resets the large visible wheels to zero and prints a row of zeros on the top line of the ticket to indicate that register was cleared. After delivery is completed, knob is again turned, and quantity of liquid delivered is automatically printed on second line of ticket, which is then released for removal. Print-O-Meter is available with type S industrial meters in 1 to 4-in. sizes for rates of flow from 5 gpm to 500 gpm. Made by **Neptune Meter Co.**, 19 W. 50th St., New York 20, N. Y.

For more details circle NED-180 A5 on enclosed inquiry slip

CONVEYOR SWITCH
moves 40 degrees to either side

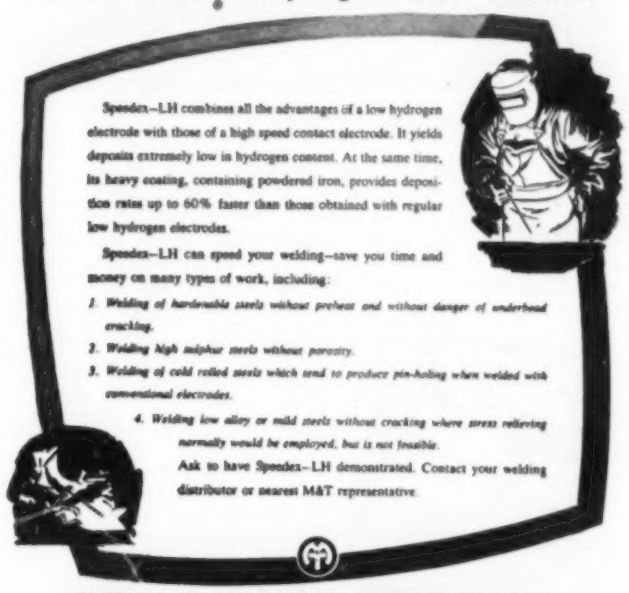
Flex-A-Tail conveyor switch employs a permanently mounted Flex-A-Joint with flexible assembly of split rollers, mounted in individual frames, moving on a stationary slider bed. Attached to the flexible assembly is a 5-ft portable tail section of wheel or roller gravity conveyor. Other lengths up to 25 ft are available. Receiving end is attached to discharge end of shipping room conveyor, with tail section extending onto the loading dock. Latter section can be moved through 40 degrees to either side of straight-through position. Switching unit is available in 11½, 15 and 18-in. widths in wheel and roller models. Couplings for standard gravity conveyors of other makes can be furnished. Made by **Metzgar Conveyor Co.**, 416 Douglas St. N.W., Grand Rapids 4, Mich.

For more details circle NED-181 A5 on enclosed inquiry slip

for high speed welding of hard-to-weld steels

Speedex-LH

the new MUREX low hydrogen-contact electrode



Speedex–LH combines all the advantages of a low hydrogen electrode with those of a high speed contact electrode. It yields deposits extremely low in hydrogen content. At the same time, its heavy coating, containing powdered iron, provides deposition rates up to 60% faster than those obtained with regular low hydrogen electrodes.

Speedex–LH can speed your welding—save you time and money on many types of work, including:

1. *Welding of hardenable steels without preheat and without danger of underbead cracking.*
2. *Welding high sulphur steels without porosity.*
3. *Welding of cold rolled steels which tend to produce pin-holing when welded with conventional electrodes.*
4. *Welding low alloy or mild steels without cracking where stress relieving normally would be employed, but is not feasible.*

Ask to have Speedex–LH demonstrated. Contact your welding distributor or nearest M&T representative.

METAL & THERMIT CORPORATION
100 EAST 42ND STREET • NEW YORK 17, N. Y.
MUREX electrodes • arc welders • accessories

For more details circle NED-182 A5 on enclosed inquiry slip

NEW YALE WAREHOUSER

equipped with

New Yale Warehouser equipped with Extend-A-Forks maneuvers easily in 6-foot aisle

Exclusive feature saves more space than ever!

Now—a new YALE Warehouser with an important new difference! Exclusive Extend-A-Forks *reach out* with full 20-inch stroke to pick up loads... *pull back* to tuck loads close in for extra space-saving in narrow aisles ... *tilt* automatically for in-transit stability. This new YALE Warehouser complete with Extend-A-Forks is full-rated for 2000 and 3000 lb. load capacities... lifts to 126 inches... features excellent visibility and one-hand control of lifting, lowering and driving. Ideal for indoor or outdoor use.

YALE*

INDUSTRIAL LIFT TRUCKS AND HOISTS
*Reg. U. S. Pat. Off.

MAIL THIS COUPON TODAY

The YALE & TOWNE Manufacturing Co., Dept. 371
Roosevelt Blvd. & Haldeman Ave., Phila. 15, Pa.

☐ Please send more information about the new YALE Warehouser with "Extend-A-Forks."
☐ Please have your local Representative call.

Company_____
Name_____ Title_____
Street_____ City_____ State_____

In Canada write: The Yale & Towne Manufacturing Co., St. Catharines, Ont.

Gas, Electric, Diesel & LP-Gas Industrial Trucks
Worksavers • Hand Trucks • Hand & Electric Hoists • Pul-Lifts

For more details circle NED-183 A5 on enclosed inquiry slip

Cutting-off should be done on a Hack Saw

Any way you figure it—speed, accuracy, squareness or cost—a hack saw will far out-perform a band saw when it comes to cutting-off from bars or billets. As builders of both band saws and hack saws we frankly admit this.

Basically, metal-sawing performance reduces to (1) the cutting-edge, (2) blade speed and (3) feed pressure, just as accuracy and squareness depend on the rigidity and tautness of the blade. In each of these basic factors the hack saw has a wide advantage—advantages which in actual results do average shop jobs as much as 4 times faster and for as little as 1/9th the blade cost.

Write for Catalog showing a complete, modern line of high-performance Metal Saws (Both "Band" and "Hack")

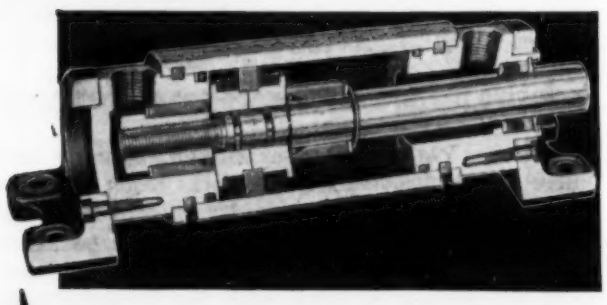
ARMSTRONG-BLUM MFG. CO.
5700 BLOOMINGDALE AVE. • CHICAGO, ILL.

▲ For more details circle NED-184 A5 on enclosed inquiry slip ▲

NEW

Assembly Plant helps meet increased demand for O-M cylinders!*

*Standard, semi-standard and "special" air and hydraulic cylinders all assembled from large, complete shelf stocks of component parts, then tested and shipped directly from Ortman-Miller's modern new assembly plant . . . assures the *right* cylinder for the job, *delivered in LESS TIME!*



O-M CYLINDERS fit where others won't

Available in full range of sizes (1½" to 8" bores) with standard, 2 to 1 or oversize rods. Completely interchangeable parts.

Write for FREE CATALOG!

MAIL COUPON NOW!

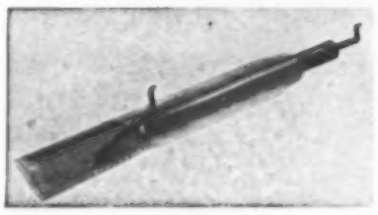
ORTMAN-MILLER MACHINE COMPANY
9 143rd Street, Hammond, Indiana

☐ Have representative call ☐ Send latest catalog
☐ Send ¼-scale templates ☐ Send ½-scale templates

Name_____ Position_____
Company_____
Address_____
City_____ Zone_____ State_____

▲ For more details circle NED-185 A5 on enclosed inquiry slip ▲

HAND DEBURRING TOOL
has rotating swivel-action blade

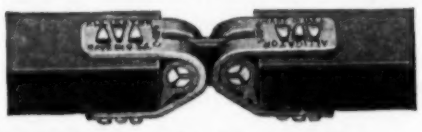


Improved Burr-Qwik hand deburring tool features freely rotating swivel-action blade which not only increases deburring speed, but minimizes risk of nicks, scallops and scratches on material being worked. Tool will deburr material ranging from hardened stainless steel through the softer metals and plastics and is usable on cut, molded and processing edges. Small blade is for deburring tubing, small holes and other small work, while larger blade handles straights, radii and larger tubing. Tension spring within aluminum handle allows quick interchange of blades. Vinylite Pocket-Pak contains tool parts. Made by **Universal Metal Products, Inc.,** Dept. N-100, 411 Vineland St., Bassett, Calif.

▲ For more details circle NED-186 A5 on enclosed inquiry slip ▲

V-BELT FASTENERS
usable for single or multiple drives

Furnished for A, B, C and D sizes of belts, Alligator V-belt fasteners permit making up lengths to fit any drive economically and quickly. Recent improvements in these fasteners include use of nylon bushing in place of steel bushing.



This serves to reduce the weight, improve the wear resistance and absorb shocks. In addition to fasteners, complete package drive units are offered which contain everything needed to make up V-belts quickly. Made by **Flexible Steel Lacing Co.,** 4607 Lexington St., Chicago 44, Ill.

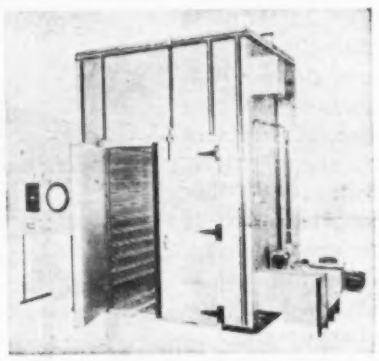
▲ For more details circle NED-187 A5 on enclosed inquiry slip ▲

PORTABLE HOT AIR HEATER
hourly output is 300,000 Btu

Quick source of heat for storage yards, loading platforms and docks can be provided by this portable oil-fired high velocity hot air heater. Salamander is available with electric drive for use on any 110-v, 60-cycle outlet, or with self-contained gasoline engine. Additional uses include preheating trucks and other equipment, thawing aggregates, preventing concrete from freezing during curing and drying out newly painted or plastered areas. Both models have thermal capacity of 300,000 Btu per hour, with heated air output of 2400 cfm. Ventilating air temperature rise is 150° F. The 14-in. hot air discharge outlet is supplied with an adjustable deflector. Flexible canvas air duct is optional. Made by **Clayton Mfg. Co.,** Dept. N, Box 550, El Monte, Calif.

▲ For more details circle NED-188 A5 on enclosed inquiry slip ▲

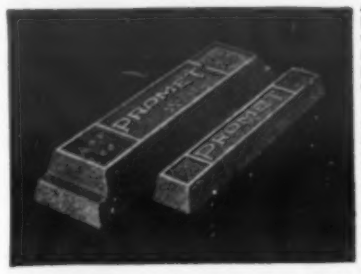
ELECTRIC CURING OVEN
for rubber and plastics components



Packaged truck-loading model 3359 electric oven is designed for curing such rubber or plastic components as silicons, Teflon, reinforced Fiberglas, high pressure hose, polyester resins and many polymerizing compounds. It can also be used for baking purposes. Unit has cross-flow circulation for uniformity of temperature. Normal and venting exhausters are standard. Automatic timing device controls venting. Doors can be at one or both ends of oven. Three-phase electric open-coil or strip heaters operate on 550 v and are placed in suction plenum chamber in front of fan. Doors have electrical interlocks. Made by **Lydon Brothers, Inc.,** 85B Zabriskie St., Hackensack, N. J.

▲ For more details circle NED-189 A5 on enclosed inquiry slip ▲

WHY PROMET BABBITT
Excels All Others–



A soft metal with unequalled lubricating properties, yet with so close a structure that it is more resistant to compression and wear than harder metals.

In the most severe industrial service, Promet babbitt has never failed to provide complete satisfaction in comparison with any material previously used.

High compressive strength—Promet babbitt metal has greater compressive strength than that of any other white metal, except those which contain an excess of copper and/or nickel and which are, therefore, not too suitable for bearing purposes because of the danger of cutting or scoring the shaft. Low coefficient of friction.

Strength at elevated temperatures which would almost be considered dangerous with ordinary babbitt metals.

Chemical permanence—Promet babbitt will not disintegrate or lose any of its properties by the action of moisture, heat, extreme service, repeated remelting, or any chemicals used in ordinary manufacturing processes. Constant repouring has only a refining action. It is only necessary to heat Promet metal from 900 degrees to 950 degrees F. and pour. Promet will not "burn" or spoil and can be heated to 2000 degrees F. without injury. There is practically no dross.

Temperary failure of lubrication—Promet babbitt metals, because of their natural lubricating properties, cannot cut or score the shaft under any circumstances.

Minimum shrinkage—Trouble arising from imperfect contact of Promet babbitt metals with their supporting shells is practically nil.

If you wish to examine a sample of Promet, a miniature pig of the metal will be sent for your test upon request.

THE AMERICAN CRUCIBLE PRODUCTS COMPANY
1327 Oberlin Avenue Lorain, Ohio, U.S.A.

▲ For more details circle NED-190 A5 on enclosed inquiry slip ▲

NOW! Automatic
offers a complete line of
DYNAMOTIVE
Gas Trucks with Electric Transmission

• New models up to 10,000 lbs. capacity!

• Unique Dynamotive engineering design, outstanding features!

Dynamotive models now offer a selection of capacities from 4,000 to 10,000 lbs. The gas-powered Dynamotive has a special, electric transmission that does away with clutch, gearshift, hydraulic torque converter, and over-drive. Has top-performance features, including "Inching Control." Models available with LP-Gas. The Dynamotive costs as little as $3.18 a day to lease...or can be financed for deferred-payment purchase through "Earn-Its-Own-Way" Lease-Finance Plan. Write for details.

Automatic
WORLD'S LARGEST EXCLUSIVE BUILDER OF ELECTRIC-DRIVEN INDUSTRIAL TRUCKS
61 W. 87th St., Dept. A5, Chicago 20, Ill.

▲ For more details circle NED-191 A5 on enclosed inquiry slip ▲

CUT CORROSION COSTS

WITH
TYGON PAINT

Easily applied liquid plastic dries quickly to form a tough film that resists acids, alkalies and oils.

Used with Tygorust Primer, Tygon Paint simplifies maintenance painting—cuts surface preparation—outlasts conventional paints many times over.

WRITE FOR BULLETIN 750 420 D

U. S. STONEWARE
AKRON 9, OHIO

▲ For more details circle NED-192 A5 on enclosed inquiry slip ▲

Slash costs of shaft retention and provide a more powerful, efficient retainer! Made of elastic vinyl that's oil, chemical and corrosion resistant, SHAKEPROOF Plasti-Rings roll into prepared groove on shaft . . . provide a shoulder that withstands up to 250 lbs. direct shear. 16 sizes: ⅛"—1" shaft size. Send for free Sample Kit and Booklet today!

SHAKEPROOF
"Fastening Headquarters" ®
DIVISION OF ILLINOIS TOOL WORKS
St. Charles Road, Elgin, Illinois • Offices in principal cities

▲ For more details circle NED-193 A5 on enclosed inquiry slip ▲

NEW FREE BOOK
gives factual help on gearmotor applications

Here's a new book on the full line of Westinghouse Gearmotors. It's helpful and informative! Discussed are the many benefits to be derived from applying gearmotors to your speed-reduction jobs. Gives specifications and covers the many gearmotor features that assure long life with minimum maintenance.

Included is a simple procedure for selecting and specifying the correct Westinghouse Gearmotor. There's a section telling of advantages gained through undivided responsibility when you specify Westinghouse.

Ask your local Westinghouse Representative for a copy of B-5645, or drop a line to Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Penna.
J-07334

YOU CAN BE SURE...IF IT'S Westinghouse

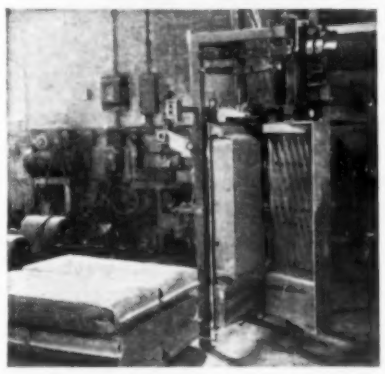
▲ For more details circle NED-194 A5 on enclosed inquiry slip ▲

STAIR-CLIMBING HAND TRUCK
cable actuated ratchet drives wheels

Special ratchet mechanism enables the Stair Cart to roll up stairs step by step as operator pulls cable drive. With this hand truck, one man can double the load he can normally roll up steps and treble the load he can move down stairs or ramps. Two-wheel safety brakes allow control at all times during descents. Interchangeable shoes, sealed ball bearings, steel tube construction and large pneumatic tires are features. Six different models are available for handling various sizes of loads, including a special barrel cart and complete welding cart. Made by **Valley Craft Products, Inc.,** 582 Jefferson Ave., Lake City, Minn.

▲ For more details circle NED-195 A5 on enclosed inquiry slip ▲

VACUUM BAG FILLER
handles finely ground powders



Finely ground materials such as DDT, powdered silica gel, diatomaceous earth, zinc oxide and magnesium powders can be handled by this vacuum filling machine. Photo shows filled valve type bag ready to be removed from the machine. Bag is placed on filling spout, button is pressed, shroud closes, vacuum is applied and material is admitted to the bag. Operation stops and shroud opens automatically when material has reached a predetermined weight in the bag. Made by **Carter Engineering Co.,** 123 N. Hazel St., Danville, Ill.

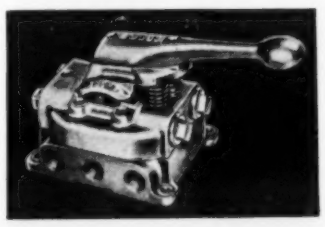
▲ For more details circle NED-196 A5 on enclosed inquiry slip ▲

PORTABLE BELT SANDER
abrasive belts are easily changed

Straight-line sanding action of model 136 portable abrasive belt sander makes it possible to sand up against corners and eliminates finishing margins by hand. Motion of belt carries dust away. Abrasive belt is kept cool during operation as two-thirds of the 21-in. belt is always dissipating heat into the air. Belts are easily changed from coarse to fine or from woodworking to metalworking abrasive grits. Use can be on wood, metal, glass, ceramics and other materials. Universal motor and gearing utilize ball bearing and self-lubricating bronze bearings. The 3-in. belt travels at 850 sfpm. Made by **Porter-Cable Machine Co.,** 51 Exchange St., Syracuse 8, N. Y.

▲ For more details circle NED-197 A5 on enclosed inquiry slip ▲

HAND & FOOT VALVES
made in three and four-way models



Single and double foot treadle and vertical and horizontal hand lever controls are available in improved 880 series of three and four-way valves. Change from hand to foot operation is easily made. Separate base is offered to permit manifolding series of bases to each other for simplified piping. Valves can be disconnected without disturbing piping. All models have standard two-position locking action, but can be ordered with spring return or three-position locking action. Pipe sizes include ¼ and ⅜-in. in three and four-way models. Pressure rating is 125 psi, and maximum recommended operating temperature is 175° F. Made by **Ross Operating Valve Co.,** Dept. 1511, 120 E. Golden Gate Ave., Detroit 3, Mich.

▲ For more details circle NED-198 A5 on enclosed inquiry slip ▲

It may help you!

Carpenter Titanium Tubing is light. It's strong. It has a remarkable endurance limit. Weighing about 56% as much as high alloy steel, titanium has a tensile strength that compares favorably with many steels. It possesses an endurance ratio well above both steel and non-ferrous metals.

Carpenter Titanium Tubing is highly resistant to most corrosives, salt water and salt atmospheres. Its extreme resistance to erosion and cavitation is unique among metals. Yet, with all this, Carpenter Titanium Tubing is ductile, may be successfully machined.

Perhaps the advantages of Carpenter Titanium Tubing can help you solve design and production problems. Would you like to know more about it?

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, New Jersey

▲ For more details circle NED-199 A5 on enclosed inquiry slip ▲

Eliminates Seizing and Galling.....

"John Crane" High Temperature Thred-Gard protects threaded surfaces against the welding action caused by extreme heat. Studs, bolts, etc., can be easily disconnected, even after prolonged service at temperatures to 1200° F. . . . greatly reduces dismantling time—permits the re-use of threaded connectors many times over.

Assembly-wise, Thred-Gard decreases wrench torque . . . allows connections to be drawn up to a greater degree of tightness without undue stress or strain.

Test Thred-Gard on your application at our expense. Send for sample and literature. Crane Packing Co., 1811 Cuyler Ave., Chicago 13, Illinois. *In Canada: Crane Packing Co., Ltd., 617 Parkdale Ave., N., Hamilton, Ont.*

JOHN CRANE CRANE PACKING COMPANY

▲ For more details circle NED-200 A5 on enclosed inquiry slip ▲

"HOW MEYERCORD SERVES INDUSTRY"
No. 4 of a Series

MEYERCORD Nameplate DECALS Help Consumers USE Your Product Correctly

Meyercord Nameplate Decals on your product promote proper use by the consumer. Use Meyercord Decal Nameplates for operating instructions, safety signs and warnings, indicators and guides, lubrication charts, dial and gauge markings, and wiring diagrams. Meyercord Dealer nameplates refer the user back to the dealer for parts and replacement. Meyercord Decals are individually engineered for quick, easy application to any commercial surface, without change in your present assembly line, for long or short production runs . . . at astonishingly small cost per unit. Let a Meyercord Decal engineer study your product and make specific recommendations . . . without obligation . . . as another Meyercord service to industry.

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Send today, on your company letterhead, for full-color guide to every industrial problem in marking, indentification.

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World's Largest Decalcomania Manufacturers
DEPT. C-316
5323 WEST LAKE ST.
CHICAGO 44, ILLINOIS

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Ratchet Head Model—two Tools in one

Head only of plain head model

Warpage of a $9.45 casting, due to clamp overtightening in a milling operation, was charged with 25 to 30 rejects daily at International Harvester Company, Louisville Works. PROTO Torquers eliminated this problem entirely... Other leading manufacturers are also effecting huge savings with this revolutionary tool. Ask your PROTO dealer for a demonstration. Send 10¢ for 68-page catalog to

PLOMB TOOL COMPANY
2275L Santa Fe Ave., Los Angeles 54, Calif.

TORQUER ADVANTAGES
- Fastest in World
- Automatic Torque-Limiting Release
- No Dials, Scales or Pointers To Watch or Break
- Both In-Lb. & Ft.-Lb. Models

Eastern Factory: Jamestown, N.Y.
Canadian Factory: London, Ont.

5482
PROTO TOOLS
PROTO means PROfessional TOOLS

For more details circle NED-202 A5 on enclosed inquiry slip

42 STOCK SIZES

HALLOWELL SOLID STEEL COLLARS

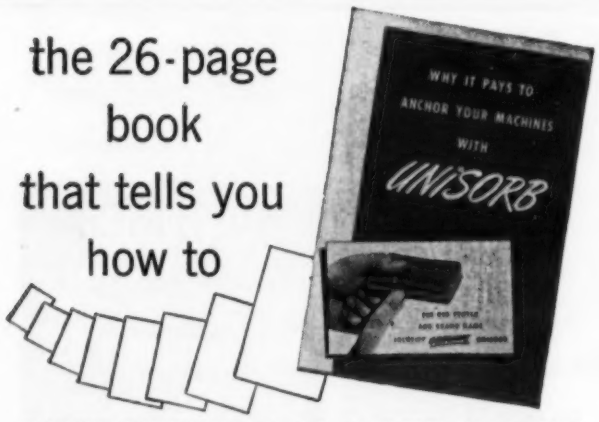
now size-marked for easy identification

Your HALLOWELL distributor now stocks these *size-marked* precision machined solid steel collars in sizes to fit shafts from 3/16" to 3" inclusive. And positive positioning of every HALLOWELL Collar is assured by the famous self-locking UNBRAKO Socket Set Screw—the screw that won't work loose. Write for literature and the name of your nearest HALLOWELL distributor. STANDARD PRESSED STEEL CO., Jenkintown 24, Pa.

HALLOWELL POWER TRANSMISSION DIVISION
SPS
JENKINTOWN PENNSYLVANIA

For more details circle NED-203 A5 on enclosed inquiry slip

the 26-page book that tells you how to



- ANCHOR MACHINES and eliminate 60-85% of transmitted vibration
- ELIMINATE DRILLING of wood or concrete floors when installing machines
- SAVE TIME and money (up to 30%) on installation costs

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Address.....
City.....Zone.....State.....
Return to: The Felters Co., 224 South St., Boston 11, Mass.

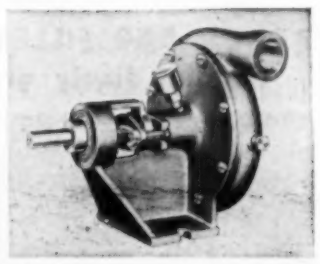
For more details circle NED-204 A5 on enclosed inquiry slip

PAINT ROLLER
Dacron fiber will not mat

Although it holds relatively large quantities of paint in its Dacron polyester fiber fleece, this paint roller is easily cleaned because of the nonabsorptive character of the material. Fiber roller will not mat or wilt, performing well with all kinds of paint, even on hard-to-paint surfaces such as cinder block, stucco and wire fences. Beveled edges of cover permit rolling close to baseboards and trim without smudging. Made by **E. I. du Pont de Nemours & Co.**, Finishes Div., Dept. NED, Wilmington 98, Del.

For more details circle NED-205 A5 on enclosed inquiry slip

CENTRIFUGAL PUMPS
lines of bronze and iron units



Impeller and shaft assembly is only moving part in lines of centrifugal pumps, available in ½, ¾ and 1-in. discharge pipe sizes. Type H bronze and type C all-iron pumps feature sealed ball bearings and semi-open type impeller which permits pumping a percentage of solids. Made by **E. L. Price Pump Co.**, Dept. NED, P. O. Box 357, Sonoma, Calif.

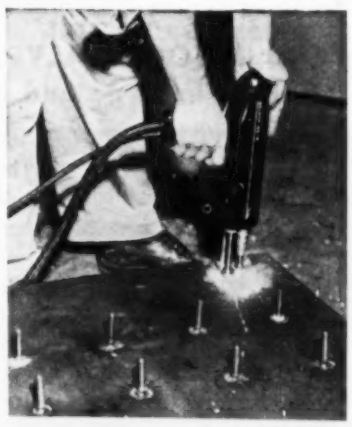
For more details circle NED-206 A5 on enclosed inquiry slip

CORROSIVE LIQUID METERS
temperature compensator built in

All wetted parts of Rotocycle meters for handling corrosive liquids are made of type 316 stainless steel. Bushings are hard carbon and ball bearings are stainless steel. Series includes 2-in., 100-gpm and 3-in., 200 gpm bulk plant models and 2-in. pipeline models. Optional type B strainer for highly corrosive liquids prevents oxidation caused by complete meter drainage. Temperature compensator (also optional) transmits liquid temperature changes to meter head where a variable speed device regulates registration to a desired liquid temperature base. Teflon stuffing box for main shaft, vapor seal in bulk plant models and adapter unit in pipeline type are other features. Made by **Rockwell Mfg. Co.**, Meter & Valve Div., Dept. NED, 400 N. Lexington Ave., Pittsburgh 8, Pa.

For more details circle NED-207 A5 on enclosed inquiry slip

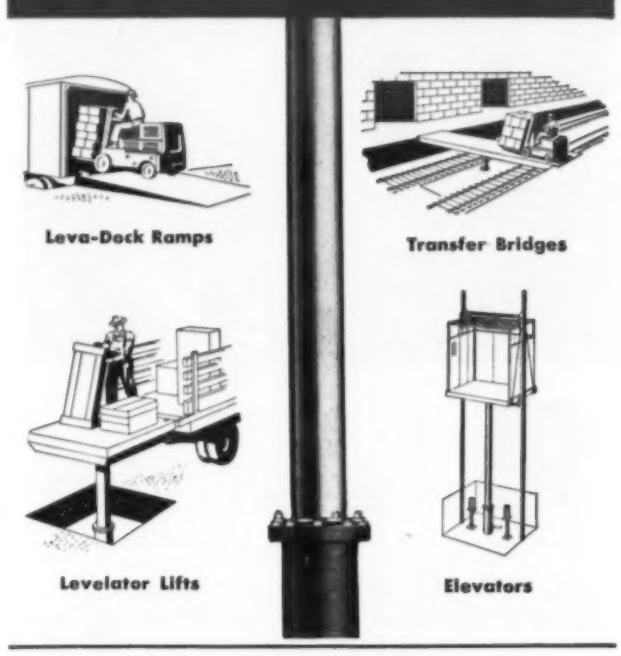
STUD WELDING GUN
available in two sizes



Model NS-9 stud welding gun is available with cable and controls in two sizes, one for welding studs with diameters up to ½-in. and the other for diameters from 10-gage up to ½-in. and greater. Although control equipment for welding studs over 1 in. is not yet available, gun will weld studs up to 1½ in. Gun accommodates greater range of stud length than previous model without changing adaptors. Arc length can be adjusted without disassembly. Cables enter steel barrel through a swept-back handle. Smooth barrel and elimination of side cable loop simplifies accurate stud alignment on work piece. Made by **Gregory Industries, Inc.**, Nelson Stud Welding Div., 2717 Toledo Ave., Lorain, O.

For more details circle NED-208 A5 on enclosed inquiry slip

Rotary
OILDRAULIC POWER
Cuts the cost of lifting heavy loads



Write for catalogs

ROTARY LIFT CO., 1053 KENTUCKY, MEMPHIS 2, TENN.

For more details circle NED-209 A5 on enclosed inquiry slip

Presto . . . it's UP!

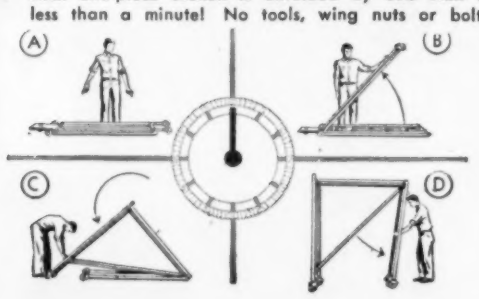
25 ft. "UP-RIGHT" SCAFFOLD-ON-WHEELS

Set up in only 5 minutes!

As if by magic, an aluminum alloy tower of any height desired is ready in minutes! Individual scaffold sections are set one on top of the other. Sections lock into place instantly. The tower rolls down aisles . . . straddles machinery.

HERE'S THE SECRET!...
Patented ONE-PIECE SECTIONS

Each one-piece section is unfolded by one man in less than a minute! No tools, wing nuts or bolts.



WRITE FOR DESCRIPTIVE BULLETIN

"UP-RIGHT" SCAFFOLDS
DEPARTMENT 141 • 1013 PARDEE STREET • BERKELEY, CALIFORNIA
Factories: Berkeley, Calif. and Teterboro, N. J.
Offices in all principal cities

For more details circle NED-210 A5 on enclosed inquiry slip

For the Extra Element of Safety In Temperature Control

...USE KLIXON DISC-OPERATED Thermo Snap® CONTROLS

Klixon *Thermo-Snap* Temperature Controls, designed for built-in application, give you accurate control usually at a lower cost than expensive general purpose controls.

Klixon Thermo-Snap Controls are used, in both civilian and military products, in such applications as electric heaters, gas heaters, oil heaters for fan switches and high limit shut-offs . . . in aircraft, truck and bus heaters, soldering guns, melting pots, ironing machines, flat irons for temperature control . . . in radio equipment for tube and rectifier cooling control.

Investigate Klixon Thermo-Snap Controls for use in your equipment. Write.

METALS & CONTROLS CORPORATION
SPENCER THERMOSTAT DIVISION
1901 FOREST STREET, ATTLEBORO, MASS.

▲ For more details circle NED-211 A5 on enclosed inquiry slip ▲

Save Time...Labor...Material
with BEVERLY metal cutting SHEARS

throatless SHEARS

Make any cut—straight, irregular, curved. Exclusive design permits turning work any direction while cutting. 4 models—cap. to 3/16".

Inside SLOTTER

Makes cuts up to 8" inside edge of sheet. Sharp, clean burr-free cuts always assured. Cap. 16 ga. High strength aluminum alloy body; H.C.H.C. blades.

slitting SHEAR

New "SS" Series—easier cutting with compounded linkage. 3 models—cap. to 1/8"; trimming capacity to 1/4" mild.

See your Beverly Distributor. Write for FREE illustrated Bulletin.

Beverly SHEAR MFG. CO.
3016 W. 111th STREET • CHICAGO 43, ILLINOIS

▲ For more details circle NED-212 A5 on enclosed inquiry slip ▲

CUSTOM MADE PRECISION STAMPINGS IN SMALL LOTS

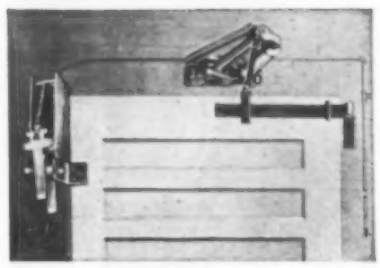
Since 1921 we have specialized in the production of accurate die-cut metal stampings in small lots. The tool cost is low . . . actually as low as 15% to 20% of the cost of permanent tools. We guarantee dependable service and delivery on date specified.

• SEND us a sample or blueprint. We'll quote you a price. Or write for detailed information.

DAYTON ROGERS Manufacturing Company
Minneapolis 7E, Minnesota

▲ For more details circle NED-213 A5 on enclosed inquiry slip ▲

SWINGING DOOR SEAL used with automatic door operator



Function of "crowding" the edges of a swinging door to provide a tight seal is provided by the Air Seal device, used in conjunction with the Air-Lec automatic door operator. Switch, pull or electric eye is used to actuate the door, Sealing device is operated automatically by the same power when the door has reached the end of its travel. Made by **Schoelkopf Mfg. Co.,** Third St. at Upham, Madison 10, Wis.

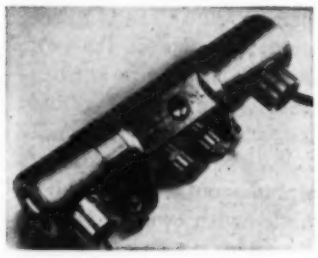
▲ For more details circle NED-214 A5 on enclosed inquiry slip ▲

EMERGENCY LOCK RELEASE can be connected to alarm system

Unauthorized entry into a building is discouraged, yet authorized emergency entry is made easy with this emergency lock release. Above hasp and padlock is special metal case with glass door. In an emergency, glass is broken with attached hammer and a spring immediately opens hasp below. No key is necessary, although keys are used ordinarily. To discourage unauthorized entry, provision is made for emergency lock to be connected to any alarm which operates when glass is broken. It can be hooked in with any burglar system at a local plant, police or fire protection center or plant office, or through central office of one of the private agencies. Made by **American Allsafe Co.,** 1242 Niagara St., Buffalo 14, N. Y.

▲ For more details circle NED-215 A5 on enclosed inquiry slip ▲

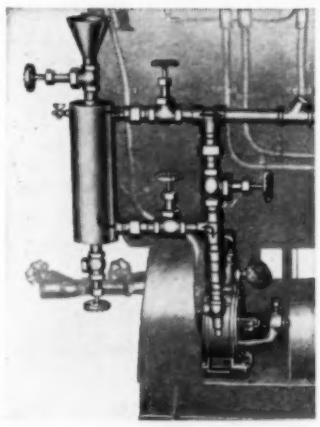
HIGH SPEED AIR VALVE is solenoid valve pilot operated



Capable of high actuation rates on short electrical signal and having short reaction rate, Hi-Cyclic air valve is solenoid valve piloted by full line pressure. Double solenoid model BVP2, illustrated, and single solenoid spring-return model BVP1 are available in 1/8, 1/4, 3/8 and 1/2-in. modified NPT sizes; three or four-way; for operation on 1.4 to 475-v dc and 3.6 to 750-v ac at 25, 30, 40, 50 and 60 cycles. They are equipped with 1/2-in. NPT electrical conduit outlet, and can be supplied with tropical and high temperature coils as well as explosionproof housings. Made by **Beckett-Harcum Co.,** 1147 Wayne Rd., Wilmington, O.

▲ For more details circle NED-216 A5 on enclosed inquiry slip ▲

WATER TREATMENT UNIT adds liquid or powdered chemicals



Usable where water or boiler conditions do not justify installation of expensive mechanical proportioning equipment to treat boiler make-up water, Chemical By-Pass Feeder is easily installed. Unit introduces either liquid or powder water treatment chemicals on discharge side of boiler feed pump, thus avoiding excessive pump wear. Device will add chemical to boiler feed water on any hot water or steam generator, regardless of make. With by-pass design, boiler feed water can be introduced through the unit's 2-gal tank containing a previously measured amount of water treating compound, or it can feed straight through from feed pump to boiler by adjusting three valves. Made by **United States Radiator Corp.,** Cyclotherm Div., Dept. NED, Oswego, N. Y.

▲ For more details circle NED-217 A5 on enclosed inquiry slip ▲

THROUGH MILLIONS OF CYCLES WITH STAR-KIMBLE BRAKEMOTORS

Stopping of a Star-Kimble Brakemotor is split-second in action, precisely timed by simple adjustments. Quiet, too — no lining screech. **Starting** is smooth and free from drag — small air gap assures quick brake release. Brake and motor are *designed* together to work together as a single compact unit. Write for Bulletin B-501-A.

STAR-KIMBLE
MOTOR DIVISION OF
Miehle Printing Press and Mfg. Co.
214 Bloomfield Avenue Bloomfield, N. J.

▲ For more details circle NED-218 A5 on enclosed inquiry slip ▲

New work gloves by Edmont

PLAX No. 101, women's sizes, medium and large.
PLAX No. 151, men's size, full

plax replaces canvas and goatskin

New plastic-impregnated material gives complete finger freedom and perfect non-slip grip. Ideal for applications requiring flexibility and dexterity. Outwears canvas 4 to 1. Costs less, yet frequently outwears goatskin, has no offensive odor, no thick-and-thin spots and does not get slick. Liquid-repellent, yet it lets hands breathe. Cool and comfortable to wear. Can be washed without shrinking.

No. 404 SNORKEL, fully coated knitwrist

Snorkel flexes like your hand

Super-flexible • Perfect fitting
Seamless palm • Grips wet or dry

Comfort and ease of work handling never before available in a long-wearing work glove. New 2-piece pattern, with curved, preflexed fingers and wing thumb, fits the entire hand perfectly, *has no seams where they can rub or wear.* Jersey liner increases flexibility. Special vinyl coating gives excellent resistance to abrasion, is grease and liquid-proof. Non-slip finish insures safe grip, wet or dry.

Free Test Offer: Plax and Snorkel are the newest of more than 50 Edmont work glove styles. Send description of your operation. Without charge we will send test samples of the glove that best fits the job.

Edmont Manufacturing Company
1240 Walnut Street, Coshocton, Ohio

No. 40 SNORKEL, palm coated knitwrist

No. 412 SNORKEL, fully coated 12-inch gauntlet

Edmont job-fitted gloves

▲ For more details circle NED-219 A5 on enclosed inquiry slip ▲

25% MORE POWER!

most powerful 1/2" drive!

- Tightens nuts and bolts faster—and tighter
- Lighter in weight . . . handier to use
- Multi-purpose—extra reserve power for faster, easier drilling, screw driving, reaming, tapping, wire brushing, hole sawing, etc.

WRITE TODAY for full details

Ingersoll-Rand

18-145 11 Broadway, New York 4, N.Y.
Originators of Impactools • Air & Electric

▲ For more details circle NED-220 A5 on enclosed inquiry slip ▲

Select pressure—get uniform, constant hydraulic control

TRADE MARK "FULFLO" REG. U.S. PAT. OFF.

OIL BY-PASS RELIEF VALVES

Standard or Flange Types

NEED NO MAINTENANCE

Precision-engineered to maintain predetermined pressures on ram presses, machine tool hydraulic mechanisms, Diesels and oil-burning equipment.
Trouble-free because built with fewest parts for dependable, quiet, constant performance.

NON-CHATTERING

BRASS OR CAST IRON . . . for pressures from 0 to 500#. Pipe sizes: ¼" to 2".

Write on your letterhead for professional edition of FULFLO MECHANICAL DATA BOOK

Please state if for Pumps, Valves, or both

FULFLO THE FULFLO SPECIALTIES CO. Inc.
PUMP AND VALVE MANUFACTURERS
BLANCHESTER, OHIO

▲ For more details circle NED-221 A5 on enclosed inquiry slip ▲

How to check precision gears quickly, conclusively, to closest tolerances

With the Kodak Conju-Gage Gear Checker, you pass every right gear, reject every wrong gear—check tooth-to-tooth composite error of .0002".

The revolutionary Kodak Conju-Gage Worm Section, used with both spur and helical gears, provides a new standard of gage precision, combines accuracy with economy. Results are recorded automatically for permanent reference.

Write for a copy of the booklet, "Kodak Conju-Gage Gear Testing Principle," which shows how Conju-Gage Instrumentation can help solve your precision gear problems.

Special Products Sales Division
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

Kodak TRADE-MARK
CONJU-GAGE INSTRUMENTATION

▲ For more details circle NED-222 A5 on enclosed inquiry slip ▲

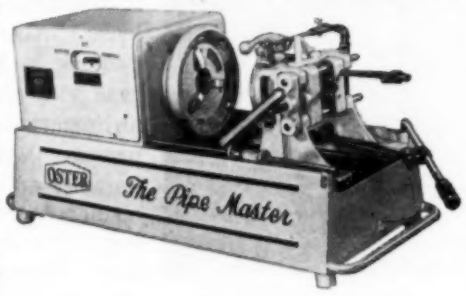
SAFETY SHOE
insulates aganst heat and cold

Personnel can insulate their feet against extremes of heat or cold in hot mills, refrigeration departments, mines and outdoor work by wearing the Thermaliner safety shoe. Entire upper is padded with thin layer of foamed vinyl that contains many tiny sealed-in air bubbles. Material does not absorb moisture, perspiration, oil or odors. An 8-in. high field boot and a 12-in. rubber winter-pac are also available. All have steel toe protection. Made by **Lehigh Safety Shoe Co.**, Dept. N, Emmaus, Pa.

▲ For more details circle NED-223 A5 on enclosed inquiry slip ▲

PORTABLE THREADER
for pipe and bolts up to 2 in.

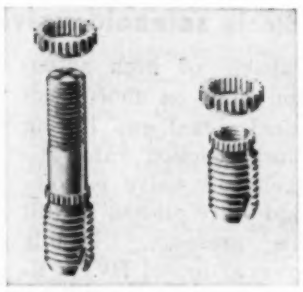
Reaming, threading and cut-off of all sizes of pipe and bolts from 1/8 to 2 in. diameter are possible with No. 552 Pipe Master machine. Portable unit will drive geared die-stocks and cutters up to 12 in. through a special drive shaft. The 265 - lb machine has a 1/2-hp universal, geared head, variable speed motor. Spindle speeds can be varied with load from 22 to 36 rpm. Machine also has floating type adjustable die head and wrenchless front chuck. Made by **Oster Mfg. Co.**, 2066 E. 61st Pl., Cleveland 3, O.



▲ For more details circle NED-224 A5 on enclosed inquiry slip ▲

SELF-TAPPING THREAD INSERTS
made of aircraft quality steel

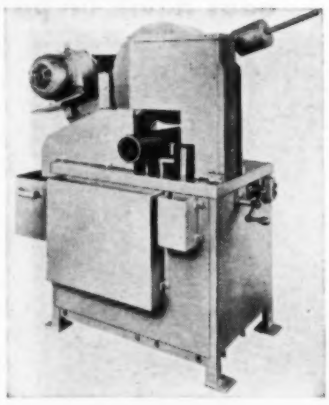
Self-tapping design of Rosan ring-locked thread inserts and studs prevents collapse of insert's tapping segments during installation. All threads are American National form so that emergency replacements can be made with standard threaded parts. High speed installation and precise depth location is made possible by use of a micrometer adjustment type power drive tool. This tool accurately locates top of stud or insert's serrated collar to the desired depth below the surface of the parent metal. Made by **Rosan Inc.**, 2901 W. Coast Highway, Newport Beach, Calif.



▲ For more details circle NED-225 A5 on enclosed inquiry slip ▲

ABRASIVE CUTTING MACHINE
stationary and portable types

Speed of about 3 seconds per square inch of material being cut is claimed for Sever-All dry abrasive cutting machine. No. 28 unit, made in stationary and portable types, is designed to handle material up to 4 in. square at 90 degrees to axis for solid steel, or 8 in. at 90 degrees to axis for channels. These specifications are based on using an 18-in. diameter cutting wheel with a 10 hp motor. Wheel is lowered into work by hand lever. Oscillating type machine cuts with a minimum of pressure on the abrasive wheel. Work holder automatically positions the material in the center of the work support under center of wheel. Material is clamped at both sides of the cutting wheel. Made by **American Chain & Cable Co.**, Campbell Machine Div., Dept. NED, 931 Connecticut Ave., Bridgeport 2, Conn.



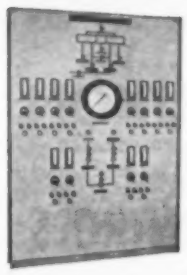
▲ For more details circle NED-226 A5 on enclosed inquiry slip ▲

Packaged Automation

complete panel units ready to operate

tailored to individual control requirements

one source single responsibility



atc®

CONTROL SYSTEMS

Automatic control systems completely designed and packaged to meet your process specifications. A. T. C. or other instruments and systems mounted and wired according to each control requirement. Design backed by years of experience in all phases of electric, electronic, pneumatic, and hydraulic control of machine and process operation. Send blueprints and specifications for confidential, complete data. Automatic Temperature Control Co., Inc., 5225 Pulaski Ave., Philadelphia 44, Pa. Represented in Canada by Powerlite Devices, Ltd., Toronto, Montreal, and Vancouver.

▲ For more details circle NED-227 A5 on enclosed inquiry slip ▲

BIG Tractor Performance in a small package

Here is something new, different and *better* in a powerful, compact, towing and pushing tractor — 5½ tons of versatile, maneuverable and rugged tractor that develops up to 8,000 lbs. of drawbar pull on dry concrete. Four wheel drive, good weight distribution, torque converter and full reversing transmission provide high tractive effort at either end — in either direction, and pinpoint control of power application. Hydraulic power-boosted steering assures high-speed maneuvering and low operator fatigue.

This tractor has been exhaustively tested, and accepted for military purposes and is now offered for commercial use for the handling of the largest aircraft. Also for heavy-duty towing jobs of all kinds at industrial plants, yards and docks. Write for full information. The Frank G. Hough Co., 746 Sunnyside Ave., Libertyville, Ill.

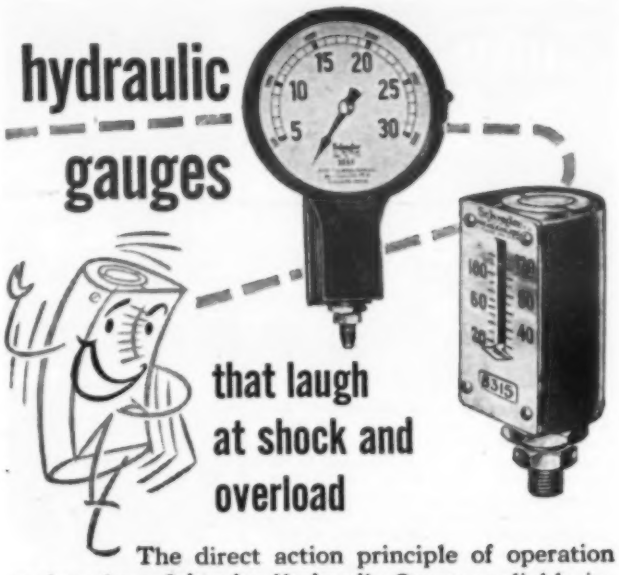
Features:

- Torque converter drive
- Hough-built, 4-speed, full-reversing transmission
- Speeds 0 to 22 mph forward
- Speeds 0 to 33 mph reverse
- Power-booster steering
- 4-wheel hydraulic brakes
- Diesel or gasoline power
- 67 horsepower (diesel)
- Overall dimensions: H-61⅝"; L-143"; W-80"

PAYLOADER®
THE FRANK G. HOUGH CO. • LIBERTYVILLE, ILL.
SUBSIDIARY—INTERNATIONAL HARVESTER COMPANY

▲ For more details circle NED-228 A5 on enclosed inquiry slip ▲

hydraulic gauges



that laugh at shock and overload

The direct action principle of operation makes these **Schrader Hydraulic Gauges** reliable indicators of pressure, even under shock and overload.

Easily installed, they are also easy to maintain.

The Schrader catalog describes the full line of Schrader Hydraulic Pressure Gauges, as well as Schrader air line equipment. A copy is yours for the asking. Write for it today.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Avenue, Dept. D-31, Brooklyn 38, New York

▲ For more details circle **NED-229 A5** on enclosed inquiry slip ▲

Drill Hardened Steels without Annealing—

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

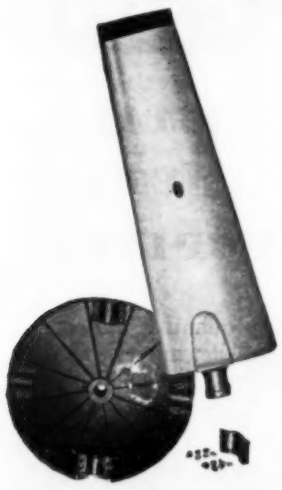
You Harden It—We'll Drill It—With "HARDSTEEL"

BLACK DRILL COMPANY, INC.
1380 East 222nd St. • Cleveland 17, Ohio

Also makers of— BLACK DRILLING UNITS—AUTOMATIC, SELF-CONTAINED—FOR COST-CUTTING PRODUCTION ON ALL MATERIALS *Write for information*

▲ For more details circle **NED-230 A5** on enclosed inquiry slip ▲

NEW tapered-blade design boosts strength and efficiency of Hartzell cooling tower fans



Hartzell's new design for 14 to 22 foot cooling tower and heat exchanger fans produces substantial increases in strength, stability and efficiency by use of a tapered blade which is considerably thicker at the shank than at the tip. Additional rigidity is provided by a heavily-reinforced leading edge which practically eliminates sag.

The new fans are available with either Hartzite plastic or plastic-impregnated wood blades. For maximum durability and length of life, Hartzite blades should be specified. However, the new wood blades show remarkable resistance to deterioration and their initial cost is lower.

For complete details on these rugged new fans, write today for your copy of Bulletin A-111A.

HARTZELL *propeller fan co.*
Div. of Castle Hills Corp.
Dept. G. PIQUA, OHIO

ENGINEERING OFFICES IN PRINCIPAL CITIES

▲ For more details circle **NED-231 A5** on enclosed inquiry slip ▲

DRAFTING PEN
pressing cap fills nib with ink

Frequent filling of drafting pens from inkwells is unnecessary with the Rule-O-Matic ruling pen which contains a cartridge that holds enough ink for 55,000 in. of ruled lines. By pressing cap, a concealed feed-tube releases exact amount of India ink needed to fill nib. New ink cartridges are easily inserted. Nibs are stainless steel and precision honed. Pens retail for $14.95, complete with two cartridges and case. Made by **Rule-O-Matic Corp.,** Dept. NE, 38 E. 57th St., New York 22, N. Y.

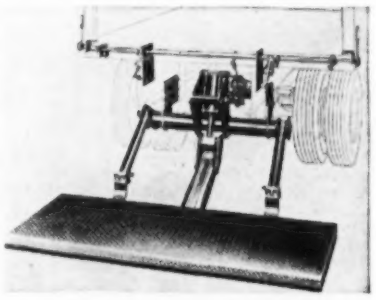
▲ For more details circle **NED-232 A5** on enclosed inquiry slip ▲

STANDARDIZED METAL SIGNS
meet safety and building codes

More than 70 industrial and institutional needs are met by line of standard light reflectant, weather resistant metal signs. They comply with safety and building code requirements. Standard sizes of 4 x 14, 9½ x 3⅝ and 10 x 14 in. are available with such wordings as "Exit," "No Smoking," "Danger," "Private" and "Receiving." Prices range from 25 to 39 cents each. Made by **Hy-Ko Products Co.,** 5026 Woodland Ave., Cleveland 4, O.

▲ For more details circle **NED-233 A5** on enclosed inquiry slip ▲

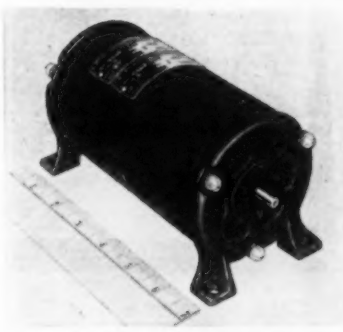
ELEVATING END GATE
lifts and lowers loads up to 2000 lb



Opening, lowering, raising and closing operations of this hydraulic elevating tail gate are controlled by levers, one on each side of the truck. Loads up to 2000 lb can be handled by the unit, intended for installation on rear of 1½-ton or larger truck or semitrailer. A single double-acting cylinder powers all operations. Safety devices stop and hold platform at any height when control lever is released, prevent motion when overloaded, prevent closing when loaded and lock the gate at truck bed level to prevent accidental release. Standard or ramp type platforms, with safety space to prevent smashed toes, are offered in four sizes with loading areas of 84 x 28, 84 x 34, 90 x 28 and 90 x 34 in. Made by **Gar Wood Industries, Inc.,** 36250 Main St., Wayne, Mich.

▲ For more details circle **NED-234 A5** on enclosed inquiry slip ▲

MOTOR-ALTERNATOR
rotor shaft extends at both ends



Synchronous operation, dynamically balanced rotors on a common stainless steel shaft, two-bearing construction and conformance to AN-E19 specifications are features of model HA-2 motor-alternator. Designed for use in laboratory and precision electronic equipment, it has two-phase, 30-cycle output at 18.5 v. Power output is equivalent to 2.7 w from shaft and 1.37 w for electrical power. Input is 115 v, single-phase, 60 cycles, at 26 to 30 w. Rotor shaft is extended at both ends of the unit, permitting it to perform several functions simultaneously. Unit measures 7 x 3½ in. and has synchronism pull-out torque of 2 oz-in. Made by **Electric Motors & Specialties, Inc.,** 400 King St., Garrett, Ind.

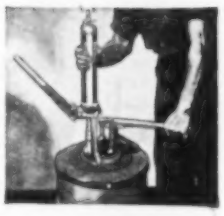
▲ For more details circle **NED-235 A5** on enclosed inquiry slip ▲

time studies prove it!

15 man-hours saved for every 400 lbs. of lubricant you use!

Alemite cuts costs!

all the way from barrel to bearing ...in maintenance...repairs... down-time...



It's a simple, planned system combining Alemite Loader Pumps and Handguns. Saves you plenty in man-power, maintenance, down-time. It's proved—it's practical—and your Alemite representative can show you the exact combination of equipment to save you money!

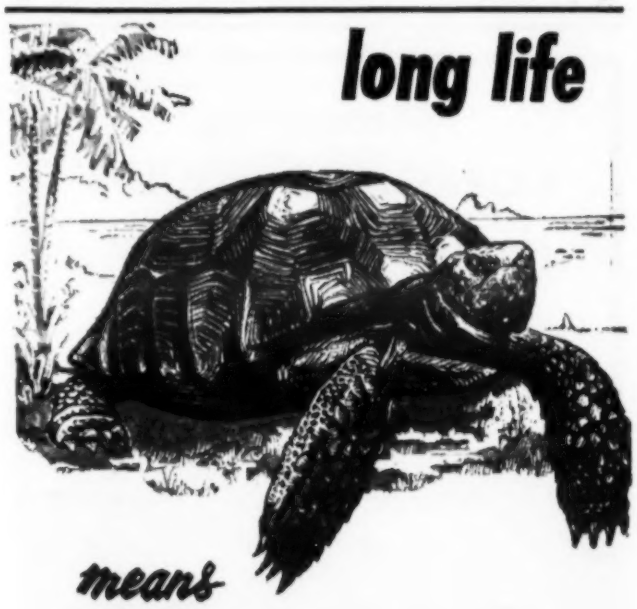
Write for free booklet —"5 Plans for Better Lubrication"

Five money saving plans! Valuable booklet sent to you free! Write Alemite, Dept. DD-15, 1850 Diversey Parkway, Chicago 14, Illinois.

ALEMITE

▲ For more details circle **NED-236 A5** on enclosed inquiry slip ▲

long life



means **dollars saved!**

Whether a 200 year old tortoise would admit this statement is debatable, but with Diamond Wheels it is an indisputable fact.

Even then, long wear depends upon many factors; Speed, correct use of coolant and of prime importance, the wheel must be just right for your job . . . in diamond grit size, bond, and in every other detail.

We at **J. K. Smit,** know after many years experience how to satisfy every grinding and cutting need.

Send for your copy of our new Diamond Wheel Catalog No. 54.

J. K. SMIT & SONS, INC.
HOME OFFICE AND PLANT
MURRAY HILL NEW JERSEY
Additional plants in London Paris Amsterdam and Toronto Canada

▲ For more details circle **NED-237 A5** on enclosed inquiry slip ▲

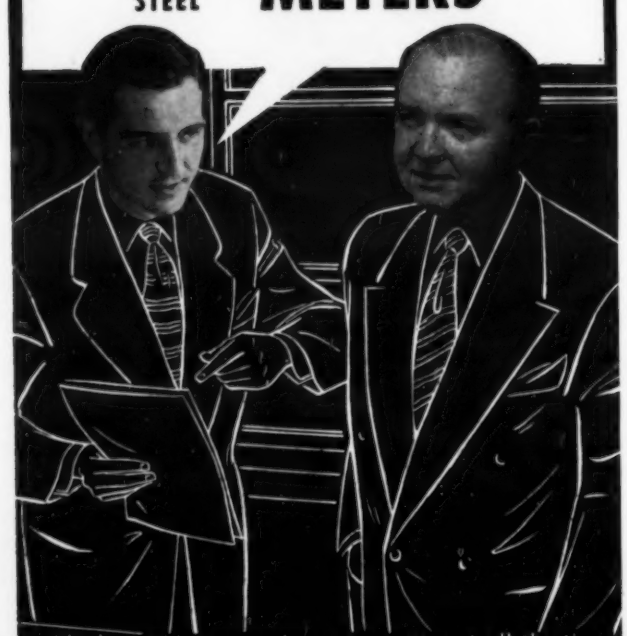
With every press on foot pedal Model 214 Chicago Double Rivet Setter automatically feeds, inserts and clinches *two* rivets. 14-inch throat accommodates large assemblies. Handles 9/64" diameter or smaller steel tubular rivets—lengths to 7/8". Quick Change Rotary Type Hoppers and Raceways permit a 5-minute changeover to rivets of different size. Adjustable anvils and riveting centers add to versatility. For help with fastening problem...send sample assembly (or a blue print) for free fastening analysis.

FREE CATALOG *contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.*

Chicago Rivet & MACHINE CO.
9606 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois
Branch Factory: Tyrone, Pa.

▲ For more details circle NED-238 A5 on enclosed inquiry slip ▲

"Measuring
CORROSIVE LIQUIDS
is no problem with
NIAGARA
STAINLESS STEEL METERS"



Whether you're measuring caustic soda, acids, molten sulphur or many other corrosive liquids, you want reliable measurement all the time. NIAGARA METERS—made of type 316 stainless steel—resist damage from a wide range of corrosive products. Maintenance is kept to the absolute minimum because of the unusual simplicity in construction of NIAGARA METERS.

If you process or use liquids of a corrosive nature, it will be to your advantage to investigate NIAGARA.

Send in the Data Request blank below . . . today.

BUFFALO METER CO.
2902 MAIN STREET
BUFFALO, N.Y.

Gentlemen:
Please send me complete information on the use of economical NIAGARA METERS, based on the data below:
Liquid _____ Pressure _____ p.s.i.
Temp. _____ °F.
Flow rate _____ g.p.m.
Maximum batch _____ gals.
Name _____
Company _____
Address _____

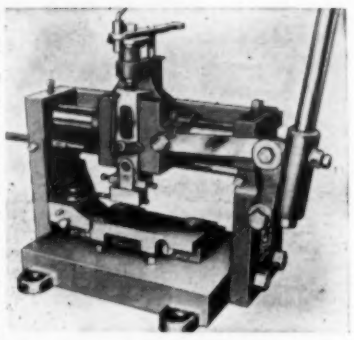
▲ For more details circle NED-239 A5 on enclosed inquiry slip ▲

AIR-HYDRAULIC CYLINDERS for automatic applications

Conforming to JIC pneumatic and hydraulic standards, series S cylinders can be operated by either oil or air pressures up to 1000 psi. Positive sealing over entire operating pressure range is assured by U-cup seals on piston. Piston rod seal and rod wiper are mounted in single removable cartridge for ease of service. Bore sizes range from 1½ to 8 in. Seven mounting styles are standard, and practically any stroke length is offered, many from stock. Special mountings, hardened rods and modifications for unusual conditions can be provided. Made by **Hydro-Line Mfg. Co.,** 5735 Pike Rd., Rockford, Ill.

▲ For more details circle NED-240 A5 on enclosed inquiry slip ▲

BENCH MARKING MACHINE for flat or cylindrical pieces



A quality marking job at high rate of speed can be done on the E.P. 1 bench marking machine. Feature of unit is ease with which it can be set up to mark a wide variety of flat or cylindrical pieces. Simple adjustments assure evenness of impression and accuracy of mark regardless of shape of piece. Machine is engineered for use with company's type of either straight or roll design. Made by **Pryor Steel Stamps Co.,** Dept. 905, 216 W. Jackson Blvd., Chicago 6, Ill.

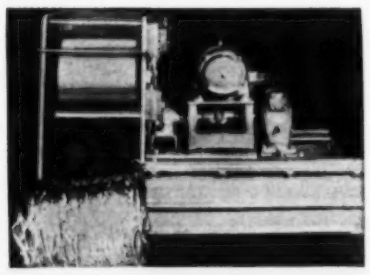
▲ For more details circle NED-241 A5 on enclosed inquiry slip ▲

PUSHBUTTON SWITCHES have snap-action mechanism

Applicable for control of electronic equipment, appliances, toys and other assemblies, B1000 series pushbutton switches handle 5-amp resistive loads and 3-amp inductive loads at 115-v dc or ac. Precision snap-action mechanism minimizes arcing and contact wear and provides trigger-like operation. Copper contacts and terminals have heavy silver overlay. Either lug type terminals or wire leads are available. Molded phenolic housing seals switch from dust and moisture. Threaded aluminum bushing swaged to housing facilitates panel mounting in ½-in. hole. Single-pole single-throw normally-open or normally closed contact arrangement is available. Made by **Hetherington, Inc.,** Dept. NED, Sharon Hill, Pa.

▲ For more details circle NED-242 A5 on enclosed inquiry slip ▲

PORTABLE SCRAP BALLER for side trimmings and wire scrap



Side trimmings from slitting lines are converted into tightly packed bundles of No. 1 heavy melting scrap by this compact portable scrap baller. It can be used as an independent unit or integrated on a slitting line. Unit occupies a 4 x 7-ft floor area and need not be anchored. Power is furnished by a two-speed, 5-hp motor which operates the mandrel at speeds of 25 or 50 rpm. It can also be used for balling wire scrap. Scrap trimmings are pulled into the machine and compacted until the scrap ball reaches a maximum diameter of 28 in. It then shuts off automatically and a hydraulic device withdraws the mandrel and the ball rolls onto the floor. Ball can weigh from 200 to 700 lb. Made by **Phillips Corp.,** Arch St., Carnegie, Pa.

▲ For more details circle NED-243 A5 on enclosed inquiry slip ▲

RAYTHEON WELDPOWER®
"makes any number of welds with identical characteristics"
says POLAROID CORPORATION

"In making many wire connections required in a research project, we have found Raytheon Weldpower eminently satisfactory" says Mr. D. P. Cooper, Jr. of Polaroid Corp. "Once set for type and size of wire, we can make any number of welds with identical characteristics. Wires are tungsten, molybdenum, brass, steel, nickel, etc. from .080" to .003" dia. No matter how unusual the combination, the flexibility of Weldpower equipment enables us to obtain a satisfactory weld in every case."

Look into the many advantages of joining ferrous, non-ferrous and dissimilar metals with Raytheon Weldpower Units. Send samples or write for full details. Address Dept. 6120-NE

Raytheon Condenser Weldpower Control Units are available in three sizes and with appropriate Weldpower Heads.

RAYTHEON
Excellence in Electronics
RAYTHEON MANUFACTURING CO.
Equipment Marketing Division
WALTHAM 54, MASSACHUSETTS

▲ For more details circle NED-244 A5 on enclosed inquiry slip ▲

UDYLITE ANNOUNCES—
A NEW, SUPERIOR
BARREL PLATING CYLINDER
MADE OF TEMPRON HARD RUBBER

Withstands, *even under load,* the highest temperatures used in plating.
•
Has greater resistance to abrasion.
•
Withstands stronger acids.
•
Can be used effectively through the entire plating cycle.

After months of research, Udylite now introduces to users of horizontal plating barrels, cylinders of Tempron hard rubber.

Tempron withstands highest plating temperatures—has chemical resistance to a wide variety of corrosive solutions—strength to handle heavy loads and is a material that performs satisfactorily throughout the complete cycle of operations.

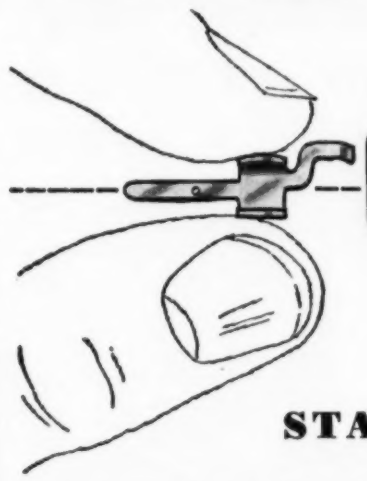
Along with Udylite's design and construction, Tempron cylinders give all the features long desired by the plating industry.

For more information, write today to—

WORLD'S LARGEST PLATING SUPPLIER

THE Udylite CORPORATION
DETROIT 11, MICHIGAN

▲ For more details circle NED-245 A5 on enclosed inquiry slip ▲



P-M

SMALL
METAL
STAMPINGS

For small stampings in any quantity, call on Patton-MacGuyer Co. Complete, modern factory facilities for volume production assures you of prompt service.

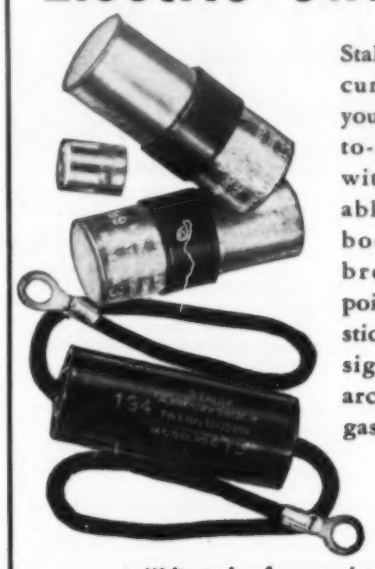
Our experienced toolmakers and engineering staff are equipped to handle any of your problems. Send in your prints for free estimates. Write for details.

P-M PATTON-MacGUYER COMPANY
19 Virginia Ave., Providence 5, R. I.

▲ For more details circle NED-246 A5 on enclosed inquiry slip ▲

Need *Dependable*

Electric Switches?



Staley Metallic Mercury Switches give you positive mercury-to-mercury contact within an unbreakable metal cap and body. No glass to break—no switch points to burn, pit or stick. Concentric design and de-ionized arc quench in inert gas. Millions in use.

Write today for complete details to:

ELECTRIC SWITCH CORP.
1313 E. ELEVENTH STREET • COLUMBUS, INDIANA

▲ For more details circle **NED-247 A5** on enclosed inquiry slip ▲

SAFETY-PULL RATCHET LEVER HOISTS
10 roller-chain models — 1,500- to 30,000-lb. 4 coil-chain models — 1,500- to 10,000-lb.

CHALLENGER LIGHTWEIGHT ALL STEEL SPUR-GEAR HOISTS
3 models — ½-, 1-, and 2-ton

OTHER SPUR-GEAR HOISTS
22 models — ¼- to 25-ton

In hand hoists — *It's Coffing*

OVER 80 SIZES AND MODELS TO FILL ALL YOUR NEEDS

Mighty-Midget Pullers 2 sizes — 500- and 1,000-lb.

Hoist Binder 3,000-lb. capacity.

Safety Load Binders 2 models — 3,000- and 6,000-lb.

Low Headroom Hoists 12 models — 1½- to 24-ton

I-Beam Trolleys 21 models — ⅛- to 25-ton

Clevis-Connected Hoists 11 models — ¼- to 10-ton

Differential Chain Hoists 2 sizes — ½- and 1-ton

Extended Hand Wheel Hoists 6 models — ¼- to 3-ton

Army-Type Hoists (plain and geared) 11 models — ¼- to 10-ton

Ask for more information on the units you need from the most complete line of hand-operated hoists. Write Dept. X1.

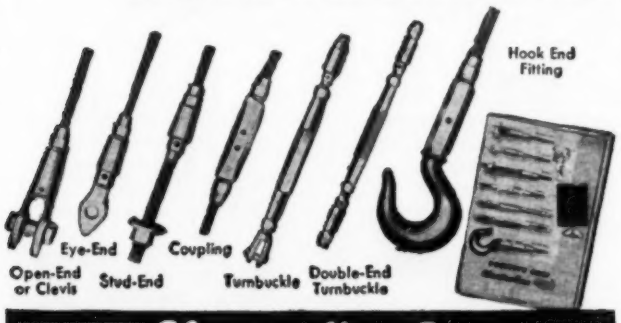
COFFING HOIST CO. DANVILLE, ILLINOIS

▲ For more details circle **NED-248 A5** on enclosed inquiry slip ▲

Cut out needless re-roping costs

USE ELECTROLINE WIRE ROPE FITTINGS

In minutes, ordinary labor can install Electroline fittings that will hang on for all time. Prolong wire rope life by damping vibration stresses thus eliminating wire rope fatigue at the fitting. Write for Electroline Catalog. It points out many savings—no cost.



Electroline Company
4121 SOUTH LA SALLE STREET
CHICAGO 9, ILLINOIS
IN CANADA: POWERLITE DEVICES, LTD., TORONTO

▲ For more details circle **NED-249 A5** on enclosed inquiry slip ▲

CARBON TYPE RHEOSTAT
operated from front, rear or side

Ability to effect gradual acceleration is feature of Temco series 3000 carbon type rheostat. It utilizes carbon piles and buttons and glazed porcelain block. Available in all colors with chrome or matching color foot pedal, rheostat can be operated from front, rear or side without creeping. Knee-operated model is also available. Made by **Electrical Mfg. Co.,** 407 Lake Ave., Racine 1, Wis.

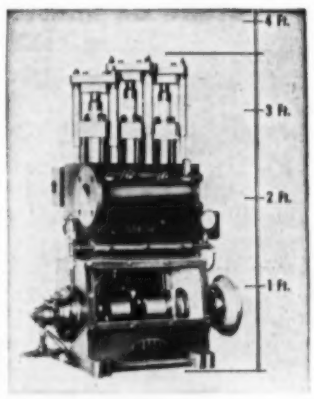
▲ For more details circle **NED-250 A5** on enclosed inquiry slip ▲

SOLDERING GUN
trigger actuated, heats instantly

Because tip of Quick Hot model 250 soldering gun is part of the element, gun is ready for soldering just 3 seconds after trigger is pressed. Gun can be used on relatively heavy materials and handles production jobs as well as intermittent soldering. It features built-in spotlight and silver plated "long-reach" tip for tight corners. Tip is easily replaced and will remain tinned indefinitely. Smaller, lighter model 199 has long-life tip, spotlight and melts solder in 2½ seconds. Both guns operate on 120-v ac, 60 cycles. Case and handles are molded plastic. Made by **Wen Products, Inc.,** 5808 Northwest Highway, Chicago 31, Ill.

▲ For more details circle **NED-251 A5** on enclosed inquiry slip ▲

DIRECT FLOW PUMP
has easily replaced fluid ends



Working barrels of the Powr-Pac direct flow Triplex pump can be furnished in carbon steel, aluminum bronze, stainless steel or Hastelloy, while plungers are made of heat treated carbon steel, stainless steel, solid porcelain or bronze. Valve seats and valves are also available in various materials. Pump has a 2½-in. stroke and is rated 25 hp. Sectionalized fluid-end design makes it possible to replace individual sections at low cost. Plunger diameters from 2½ to 11/32-in. for pressures from 390 to 20,700 psi are available. Displacements range from 109.6 to 2.08 gpm. Made by **Aldrich Pump Co.,** 4 Gordon St., Allentown, Pa.

▲ For more details circle **NED-252 A5** on enclosed inquiry slip ▲

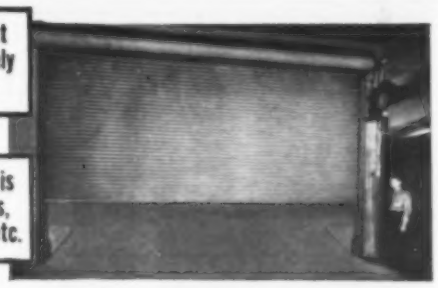
ULTRASONIC DELAY LINES
now manufactured of fused silica

Solid folded - path ultrasonic delay lines have been made in 20-in. diameters with a delay of 3333 microseconds. Disk-like in appearance, each unit consists of a thin polygon sheet of fused silica. Sheets are cut and ground by precision methods to meet tolerances up to ±0.0003-in. They are mounted and cushioned inside an aluminum casing. Fused silica can be used for making solid ultrasonic delay lines ranging in size from 10 to 3333 microseconds. Properties include resistance to cavitation under shock conditions, operating stability over a wide temperature range and wide band width. Made by **Corning Glass Works,** Dept. 21, Corning, N. Y.

▲ For more details circle **NED-253 A5** on enclosed inquiry slip ▲

Door rises straight upward—completely out of the way.

All ceiling space is clear—for hoists, conveyors, ducts, etc.



Steel jambs anchor curtain against wind or storm damage!

Rugged, all-metal resistance to fire, storm or intrusion.

All floor and wall space around door always fully usable.

Clears the entire opening, stays out of reach of damage.

Kinnear Steel Rolling Doors

Originated by Kinnear, the door with the interlocking steel slat curtain has set the pace in long-lasting, low-maintenance efficiency and all-metal protection. Coiling into small space just above the doorway, it opens *completely* out of the way, clears the *entire* opening, and permits use of all surrounding floor and wall space at all times. Built any size; motor or manual operation. Write for the new Kinnear catalog.

The KINNEAR Mfg. Co.
Factories:
3017 Fields Avenue, Columbus 16, Ohio, 1742 Yosemite Avenue, San Francisco 24, Calif.
Offices & Agents in Principal Cities

KINNEAR ROLLING DOORS
Saving Ways in Doorways

▲ For more details circle **NED-254 A5** on enclosed inquiry slip ▲

Goodyear Announces

The First TUBELESS Pneumatic INDUSTRIAL Tire

For more information on this newest Goodyear Industrial Tire, see your Goodyear Dealer or write: Goodyear, Industrial Tire Division, Akron 16, Ohio.

Built with 3-T CORD

As manufacturer of America's most complete line of Industrial Tires, Goodyear is proud to announce the first Tubeless Pneumatic Industrial Tire. With it you get these big advantages that add up to better tire performance and lower tire costs:

Puncture-protective Grip Seal construction never before offered – tire clings to puncturing nails and other sharp objects to prevent loss of air.

Reduces "Down time"–Tubeless tires permit repairs at regular maintenance checks.

Tubeless tires usually can be repaired without removing from wheel!

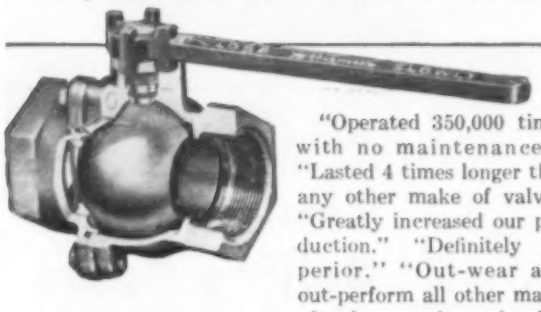
You get these advantages in a Goodyear Tubeless Pneumatic Industrial Tire because of its exclusive 3-T cord body. Yet the price is the same as you'd pay for a conventional tire and tube.

USE THE RIGHT TIRE FOR THE JOB—USE

GOODYEAR
INDUSTRIAL TIRES

▲ For more details circle **NED-255 A5** on enclosed inquiry slip ▲

Users applaud performance of Rockwood Ball Valves



"Operated 350,000 times with no maintenance." "Lasted 4 times longer than any other make of valve." "Greatly increased our production." "Definitely superior." "Out-wear and out-perform all other makes of valves used previously." "Safest for handling inflammable gas." "Operated 500 times a day without maintenance for over a year."

These and many other enthusiastic comments praise the efficiency of Rockwood Ball Valves — an efficiency based on these exclusive features:

- Full, round flow
- Quick opening and closing
- Longer wear-resistance
- Leakproof seal

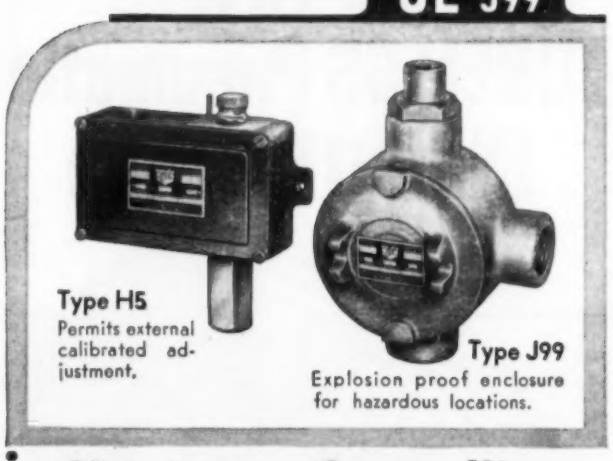
Plan now to put these benefits to work in your plant. Valves come in all pipe sizes. Tested and listed by Underwriters' Laboratories, Inc. Write today for complete information. Rockwood Sprinkler Company, 501 Harlow Street, Worcester 5, Mass.

ROCKWOOD BALL VALVES

For full, round flow efficiency

▲ For more details circle NED-256 A5 on enclosed inquiry slip ▲

AUTOMATIC PRESSURE CONTROLS UE H5 J99



Maximum Controlling Pressure 500 psi

UNITED ELECTRIC controls are precision-built units designed for maximum performance reliability at minimum cost. Type H5 is a general purpose, industrial pressure control for air, gas or liquid pressures . . . Type J99 has an explosion-proof enclosure designed for use in hazardous locations.

Pressure Ranges	various models cover ranges between limits of 0 and 500 psi
Adjustments	H5 . . . external adjustment knob, calibrated settings J99 . . . internal adjustment nut, uncalibrated settings
Switch Ratings	15 amps or 20 amps at 115 or 230 volts A.C., also D.C. switches upon specification
Switch Types	N.O., N.C., or Double Throw, no neutral position Dual switches upon specification
Differential	on-off switch differential . . . fixed or adjustable . . . uniform throughout specified range
Enclosure	Class I, Group D and Class II, Groups E, F & G
Bellows	spring loaded for quick, accurate response
Bulletins	H5 . . . Bulletin No. 5-5 upon request J99 . . . Bulletin No. 5-8 upon request

UNITED ELECTRIC *manufactures a complete line of standard temperature, pressure and vacuum controls. For special controls consult a UE application engineer.*

Write for latest bulletins or catalog for detailed information.

United Electric Controls COMPANY
81 SCHOOL STREET, WATERTOWN, MASS.

▲ For more details circle NED-257 A5 on enclosed inquiry slip ▲

DROP LIGHT REELS
20, 30 and 40-ft capacities

UL-approved Cordomatic drop light reels, identified as models 700, 800 and 900, have capacities of 20, 30 and 40 ft, respectively. Crackproof phenolic pistol grip handle is equipped with Levolier toggle action switch and socket, chromed reflector with swing-open guard and one-piece reinforced hanger hook. Kinkproof cord is neoprene covered. Reel locking mechanism is lifetime lubricated. After mounting on wall or ceiling, it is merely plugged in for use. Made by **Vacuum Cleaner Corp. of America,** Cordomatic Div., 1724 Indiana Ave., Philadelphia 44, Pa.

▲ For more details circle NED-258 A5 on enclosed inquiry slip ▲

MULTIPURPOSE GOGGLES
with replaceable acetate lens

Protection against chemical splashes, spray, dust concentration and foreign particles is offered by rubber-mounted multipurpose goggles. They have one-piece replaceable 040 lens of impact resistant acetate and replaceable fabric filter or wire screen filters on specification. Special lens composition and 060 preformed lenses are also offered. Goggles feature wide angle vision and strap terminals out of line of sight. Made by **Welsh Mfg. Co.,** 19 Magnolia St., Providence, R. I.

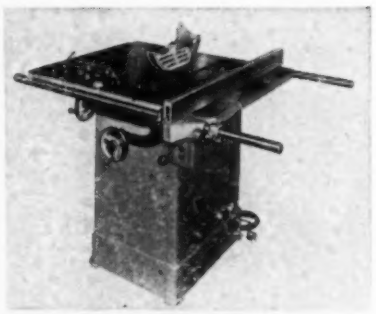
▲ For more details circle NED-259 A5 on enclosed inquiry slip ▲

RIBBED PLASTIC GLOVES
stand an unusual amount of wear

Ribbed plastic material used in these work gloves covers entire palm, thumb and first finger, while back is of cotton woven to allow "breathing." Plastic remains flexible at temperatures from −20 to 240° F. Gloves do not become stiff or tacky, and plastic ridges are slow conductors of heat and cold. Coated surface resists many chemicals and solvents, acids and alkalies of moderate concentration except ketones, chlorinated hydrocarbons or hydrogenated furans. Knit wrist, band top, safety cuff and gauntlet cuff styles are offered. Knit wrist style is also available with cotton lining for outdoor use. Made by **Boss Mfg. Co.,** 223 W. First St., Kewanee, Ill.

▲ For more details circle NED-260 A5 on enclosed inquiry slip ▲

TILTING ARBOR SAW
heavy duty model with 10-in. blade



Any standard 1 or 1½-hp motor drives the model P3018 heavy duty 10-in. tilting arbor saw through three matched V-belts and a three-groove arbor pulley. Motor mounts beneath table surface away from sawdust stream. Adjustable gibs, heavy duty trunnions which provide vibration-free operation and ground and polished cast iron table top are incorporated. Locking rip fence moves easily on extended tubular guide bars to 25½ in. to right of blade, increasing table area to 44½ in. Front guide bar has a graduated scale. Blade tilting and raising wheels can be locked at desired settings. Snap-out panel in base permits removing sawdust. Vertical depth of cut is 3¼ in., and at 45 degrees is 2 7/16 in. Dado head capacity is 6 in. Made by **Duro Metal Products Co.,** Dept. ND-1, 2681 N. Kildare Ave., Chicago 39, Ill.

▲ For more details circle NED-261 A5 on enclosed inquiry slip ▲

NOW TROUBLE-FREE deburring & countersinking with the NEW FORD UNIFLUTE COUNTERSINK

Engineered for maximum efficiency with simple *single flute design,* FORD'S new high speed steel Uniflute *ends all deburring and countersinking troubles* on soft stringy steels, aluminum, brass, bronze, plastic, rubber, wood and other materials. FORD'S new HSS Uniflute covers *a wide range of hole sizes with one diameter tool.* Its cutting action is effective from the working point to the major diameter. Job-engineered shear angles allow superior free cutting, insure trouble-free action, even at higher speeds.

FORD regrinding service adds tool life, reduces tool costs!

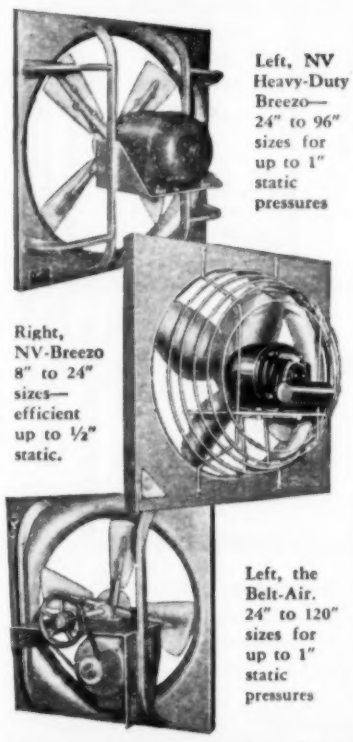
FREE information • **Bulletin HSS 408** gives complete information about Ford's new Uniflute countersink, plus easy 4-step instructions on how you can resharpen the Uniflute in your own tool room.

Catalogue No. 207 gives all facts on more than 277 FORD rotary tools including HSS ground cutters, rotary files, countersinks; CARBIDE cutters, end mills, grinding burs. **Send today!**

M. A. FORD MFG. CO., INC.
Pioneers in rotary tools for more than 30 years
721 W. River Street, Davenport, Iowa

▲ For more details circle NED-262 A5 on enclosed inquiry slip ▲

Talk ABOUT VERSATILITY in FANS!



Left, NV Heavy-Duty Breezo—24" to 96" sizes for up to 1" static pressures

Right, NV-Breezo 8" to 24" sizes—efficient up to ½" static.

Left, the Belt-Air. 24" to 120" sizes for up to 1" static pressures

It's yours in this wide line of husky, easily installed "Buffalo" package propeller fans

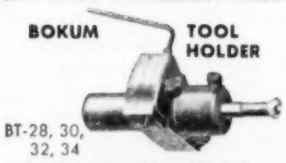
Here's propeller fan economy in a range of capacities from 500 cfm all the way up to 250,000 cfm—for ventilation or exhaust jobs at static pressures up to 1". Models for high temperatures and/or corrosion resistant, also non-sparking. Rigid, die-stamped square panels with flanges for low-cost installation in square wall openings. Write for catalogs today on these quiet, high-efficiency lifetime fans!

BUFFALO FORGE COMPANY
215 MORTIMER ST. BUFFALO, NEW YORK
PUBLISHERS OF "FAN ENGINEERING" HANDBOOK
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Sales Representatives in all Principal Cities

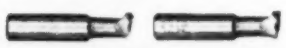
▲ For more details circle NED-263 A5 on enclosed inquiry slip ▲

A NEW STEP IN ECONOMY for screw machine work

This Bokum line-up of stock tools—designed for screw machines and turret lathes—permits you to bore and recess holes faster, more accurately, in small parts. *Result:* definite savings in time and money—reduction of costly rejects.



BOKUM TOOL HOLDER
BT-28, 30, 32, 34
Designed for holding Bokum boring tools in turret lathes and screw machines. Cat. 483 (Supp. #1).



BOKUM SHORT NECK TOOLS
Assure tool rigidity in precision boring of short holes. Both H. S. (Cat. HS-500) and carbide tipped (Cat. CT-500).

STANDARD BOKUM THREAD RECESSING TOOLS FROM STOCK
Obtain perfect threads in blind holes for the full depth of the hole. Cat. T-R.

STANDARD BOKUM BACK CHAMFERING TOOLS FROM STOCK
For cleaner, easier cut off without burr. Available (as are thread recessing tools) in sets. Cat. B-CH.

Write Dept. T for catalogs today.

TRADE MARK REG. U. S. PAT. OFF.

BOKUM TOOL CO. 14775 Wildemere Ave., Detroit 38, Mich.

▲ For more details circle NED-264 A5 on enclosed inquiry slip ▲

Tempilstik° FOR ALL HEAT-DEPENDENT OPERATIONS

looks like a crayon... marks like a crayon... tells temperatures like a precision instrument!

Sixty-three different compositions enable you to determine and control working temperatures from 113° to 2000° F. TEMPILSTIK° marks on workpiece "say when" by melting at stated temperatures—plus or minus 1%.

ALSO AVAILABLE IN LIQUID AND PELLET FORM... WRITE ADVERTISING DIV. FOR SAMPLE TEMPIL PELLETS... STATE TEMPERATURES OF INTEREST—PLEASE!

Tempil° CORPORATION
132 WEST 22ND STREET, NEW YORK 11, N. Y.

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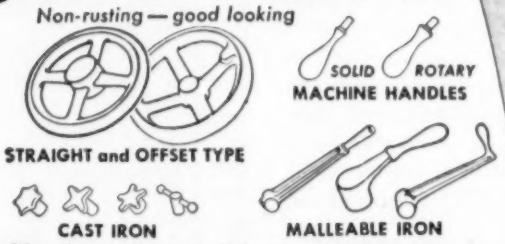
Dependable
MEASURING & CHECKING EQUIPMENT

and Now
HAND WHEELS, KNOBS, HANDLES
Cadmium Plated READY TO DELIVER
Non-rusting — good looking



Send for Complete Catalog

We also build jigs, fixtures, special tools and machinery. Send us your blueprints.

MACHINE PRODUCTS CORPORATION
6771 E. McNichols Rd. Dept. B Detroit 12, Mich.

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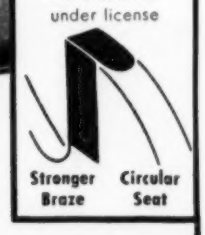
Patented manufactured under license



A better Carbide Saw —made better by the Gay-Lee patented tip

Gay-Lee has built these saws as thin as .020" and still no tip trouble or run-out was encountered in high production use. These are real production tools for all slotting operations . . are being used by leading manufacturers of business machines on extreme close tolerance work and by manufacturers of other products.

If you have slotting problems Gay-Lee can help you.

"THINSAW" *with Carbide Tips*

Built only by... **GAY-LEE COMPANY** CLAWSON • MICHIGAN

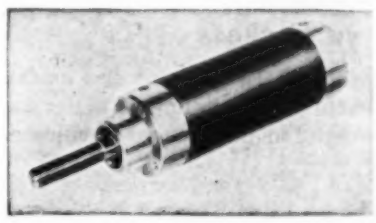
▲ For more details circle NED-267 A5 on enclosed inquiry slip ▲

POWER TURNTABLES for loads up to 1000 lb

Power operated turntables of steel, plywood or aluminum are available for wide range of uses in production, assembly, finishing and inspection work. They can be made to required diameter and height with constant or variable speed drive. Table and motor with speed reducer are mounted on a welded steel frame designed for loads up to 1000 lb. Made by **Samuel Olson Mfg. Co.,** 2423 Bloomingdale Ave., Chicago 47, Ill.

▲ For more details circle NED-268 A5 on enclosed inquiry slip ▲

POWER CYLINDER for oil, water or air service



Sealed - in lubrication and optional adjustable cushioning are features of Power Drive cylinder, operable on 500 psi maximum oil or water or 200 psi air service without interchanging or adding parts. Lightweight unit is offered in 1½, 2¼, 3 and 4-in. bore diameters. Stainless steel piston is ground and polished. Rod wiper and extra long self-lubricating bronze bearing protect finish on rod. Gland consisting of wiper, Oilite bearing and self-compensating packing can be replaced without dismantling the cylinder. Foot, flange, pivot, clevis or trunnion interchangeable mountings are available. Made by **National Pneumatic Co.,** Industrial Actuators & Controls Div., Dept. N, 125 Amory St., Boston 19, Mass.

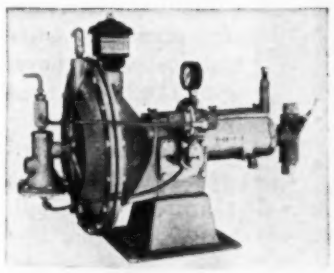
▲ For more details circle NED-269 A5 on enclosed inquiry slip ▲

CIRCUIT BREAKER SWITCH 100-amp unit for 120/240 v ac

Two single-pole hydraulic-magnetic circuit breakers with handle extensions attached to form one double-pole unit are incorporated in this 100-amp circuit breaker safety switch, permitting both breakers to be switched on or off together. Space saving unit is for service on 120/240 v ac, in two or three-wire installations. General purpose breakers in standard ratings of 70 or 100-amp are employed. They have inverse time delay to prevent nuisance tripping and minimum, and instantaneous trip points are unaffected by heat or cold. Made by **Heinemann Electric Co.,** 659 Plum St., Trenton 2, N. J.

▲ For more details circle NED-270 A5 on enclosed inquiry slip ▲

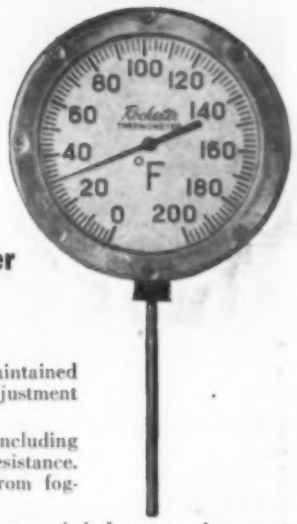
CHEMICAL PROPORTIONERS feed against pressures to 30,000 psi



Usable for chemical injection, proportioning, pressure lubrication and fluid transfer, positive-displacement reciprocating pumps will handle all types of aqueous solutions and liquid lubricants. They will inject or proportion additives into lines or vessels carrying as much as 30,000-psi pressure. Illustrated type MSM pump is operated by air or gas pressure and provides discharge pressures up to 497 times supply pressure. It can be regulated to inject exact proportions to the volumes in lines or vessels. Stainless steel construction is standard, but other materials can be supplied. Other pumps in line include high-volume transfer, electrically operated injector and proportioning, and rocker-arm actuated high pressure injector types. Made by **Texsteam Corp.,** 320 Hughes St., Houston, Tex.

▲ For more details circle NED-271 A5 on enclosed inquiry slip ▲

► **Readily Visable**
► **Adjustable Dial Position**
► **Submersible**



The RIGHT thermometer for your requirements

Shockproof accuracy — easily maintained with a simple external screw adjustment —another Rochester first.

All stainless steel construction including the weld, offers more corrosion resistance. Hermetic sealing protects dials from fogging.

Rochester Model #1850 is recommended for use wherever a straight form thermometer can be used to advantage. Model #1850 in the standard form has the stem located at the bottom. The stem can also be located at any other position around the entire periphery of the head. Available in stem lengths from 2½" to 48".

For further information on this straight form or other type thermometers—write Rochester Manufacturing Company, Inc., 114 Rockwood St., Rochester 10, N. Y.

Rochester MANUFACTURING COMPANY, INC.
DIAL THERMOMETERS • GAUGES • AMMETERS

▲ For more details circle NED-272 A5 on enclosed inquiry slip ▲

cut costs with "hands off" scrap removal

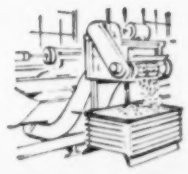
Write today for Bulletin MF-530 for detailed information.

with **CHIP-TOTE®** removes chips, turnings and borings continuously

2057-MF

Cut production costs by eliminating downtime for manual scrap removal!

While machines are in continuous operation, the MAY-FRAN CHIP-TOTE automatic scrap conveyor removes borings, turnings and chips from your high production machine tools. Design features permit a wide range of sizes to fit all standard multiple spindle or automatic machine tools.



To slash production costs, specify ... MAY-FRAN CHIP-TOTE automatic scrap conveyors.

DESIGNERS AND ENGINEERS OF COMPLETE SCRAP HANDLING SYSTEMS

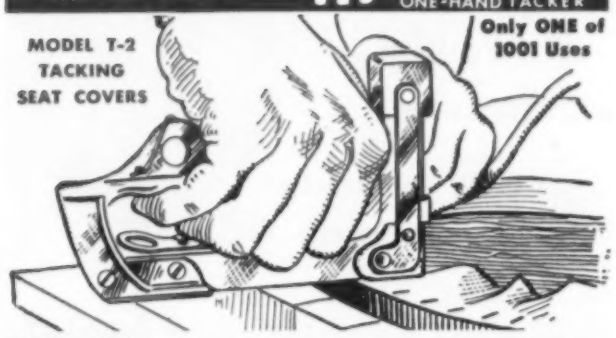
MAY-FRAN ENGINEERING, INC.
1711 CLARKSTONE ROAD • CLEVELAND 12, Ohio

▲ For more details circle NED-273 A5 on enclosed inquiry slip ▲

YOU CAN DO IT AT LESS COST with HANSEN ONE-HAND TACKER

MODEL T-2 TACKING SEAT COVERS

Only ONE of 1001 Uses



FASTER! With its zip-zip compound leverage action, Hansen saves time in all types of tacking and fastening. Fast, easy one-hand operation. Tacks fast as you grip. Leaves one hand free.

BETTER! Balanced design insures accurate, precision driving. Powerful action drives each staple firmly and neatly in place for improved quality and increased holding power. It is adaptable to a wide variety of uses — screens, insulation, TV wires, etc.

AT LESS COST! Hansen saves *time, steps,* and *materials* — operates faster — saves back-tracking — ready for instant, continual use.

(MODEL T-3-4 HANSEN TACKER)

36 DIFFERENT MODELS

80 STAPLE SIZES

Request Booklet ...today

A.L. HANSEN MFG. CO.

5164 RAVENSWOOD AVENUE • CHICAGO 40, ILLINOIS

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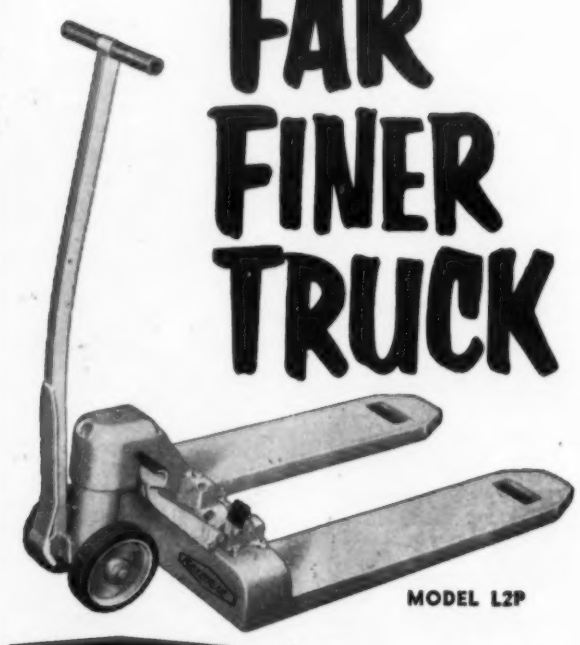
For a few dollars more, you get a

FAR FINER TRUCK



MODEL L2P

RAYMOND Lightweight PALLET LIFT TRUCK

● When buying a lift truck, don't be guided by price alone. Remember . . . performance is far more important. The RAYMOND Lightweight Lift Truck, for example, costs slightly more than similar trucks . . . yet there's a vast difference in how long and how well it performs!

● This 2,000-lb. capacity truck is constructed of only the finest materials, backed by 30 years of manufacturing skill. Nowhere in this RAYMOND Truck is quality compromised. The result is a rugged lift truck offering all these outstanding features:

ONE-PIECE WELDED FORKS . . . ⅓ times stronger than bolted fork construction.

CHROME PLATED PUMP PISTON . . . prevents leakage, prolongs pump life.

STRONGER CONSTRUCTION . . . heat-treated alloy steel ram pistons, axles, lever shafts.

HIGHLY MANEUVERABLE — FOOT PEDAL OPERATED
EFFORTLESS PALLET ENTRY — REINFORCED HANDLE
THOROUGHLY LOAD TESTED — DUAL PURPOSE BRAKE
FACTORY ADJUSTED LINKAGE — LIGHTWEIGHT

● *Mail This Coupon*

The RAYMOND CORPORATION

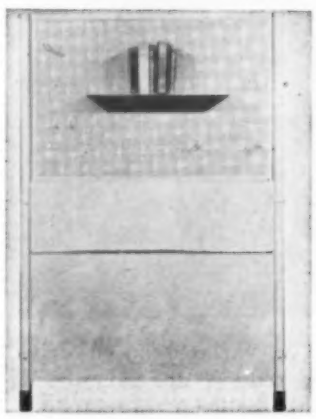
4123 Madison St., Greene, N.Y.

Please send me Bulletin 207, describing your 2,000-lb. capacity Lightweight Lift Truck, as well as your 4,000 and 6,000-lb. capacity Lift Trucks.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

▲ For more details circle NED-275 A5 on enclosed inquiry slip ▲

PERFORATED PARTITIONS accommodate hooks, bars, shelves



Panels of perforated pegboard increase flexibility of movable office partitions for Office-ettes and Partition-ettes. Modular units are designed to accommodate hooks, bars and shelves and may be used for display or other purposes where easy and rapid shifting of material is desirable. Costing slightly more than units with glass panels, the pegboard panels are interchangeable with all other Arnot Jamestown panels. Made by **Aetna Steel Products Corp.**, Arnot Jamestown Div., Dept. NED, 730 Fifth Ave., New York, N. Y.

▲ For more details circle NED-276 A5 on enclosed inquiry slip ▲

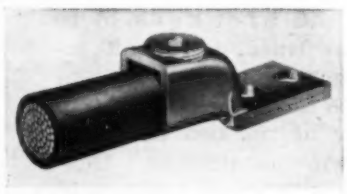
FRONT END LOADER 4 and 10 cu yd buckets

Ten cubic yard bucket on the LD20 front end loader adapts the 48,000-lb machine to handling of materials with relatively light weight in proportion to volume.

It is also available with 4-cu yd bucket for conventional loading tasks. Hydraulic boom has lifting capacity of about 18,000 lb and bucket discharge height is 14 ft. Machine itself is 9 ft 4 in. wide, 12 ft high and 32 ft 8 in. long, including bucket. Mechanical features include four-wheel planetary drive, four-wheel power steering, hydraulic operation, diesel power and Twin Disc torque converter and power divider. Loader is shown with smaller 1 cu yd model. Made by **Mixermobile Manufacturers**, 8027-A N.E. Killingsworth St., Portland, Oreg.

▲ For more details circle NED-277 A5 on enclosed inquiry slip ▲

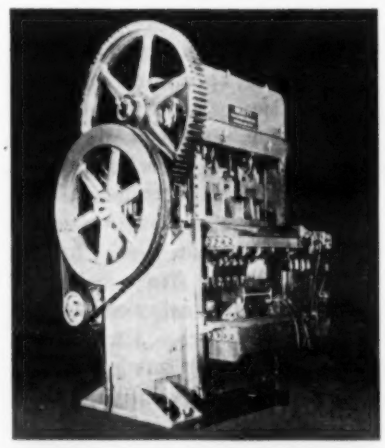
WIRE LUGS made in six sizes



Secure mountings where close spacing must be maintained are provided by VT and LO two-hole collar solderless lugs. Use is where connectors must not turn or come in contact with each other. Six sizes in 14 to 1000-mcm wire range are produced from electrolytic copper. All are shockproof and cool in operation. Made by **Ilsco Corp.**, 3700 Mariemont Ave., Cincinnati 27, O.

▲ For more details circle NED-278 A5 on enclosed inquiry slip ▲

GUILLOTINE TYPE PUNCH for punching webs of beams, angles

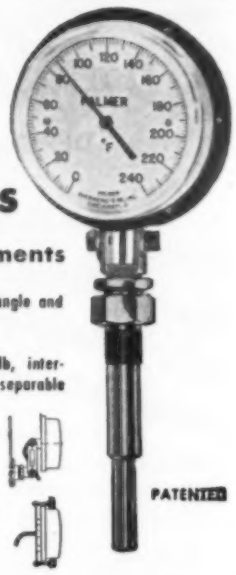


Intended primarily for structural steel fabricating shops, guillotine type punch for punching webs of beams, angles and flat plates features six individually adjustable punching tools. Maximum setting to outside units is 33 in., and minimum setting between units is 2⅜ in. Punch and die are automatically synchronized together. Machine has 200-ton capacity and is built with double housing for added strength. It is most practical for short runs where punching arrangements are frequently changed. Made by **Beatty Machine & Mfg. Co.**, Dept. A, Hammond, Ind.

▲ For more details circle NED-279 A5 on enclosed inquiry slip ▲

PALMER

MERCURY ACTUATED DIAL THERMOMETERS



in 3 types to suit any requirements

Full 4½" dial face. Stem can be placed at any angle and case can be rotated to any readable position.

1 **Rigid Stem Dial Thermometer** tapered bulb, interchangeable with standard industrial thermometer separable socket. (As illustrated above.)

2 **Wall Mounted Dial Thermometer** with flexible connecting armor. Case adjustable to easy reading position.

3 **Flush Mounted Dial Thermometer** for panel mounting with flexible connecting armor.

All three types have a full 4½" dial face.

PATENTED

For accuracy: Mercury actuated . . . Fully Compensated by Invar Compensation. Guaranteed Accurate 1 scale division.

For angularity: Can be adjusted to most readable position at any angle desired.

For readability: Bold Black Numbers . . . 11" of scale Reading Dial face can always be placed in easiest readable position.

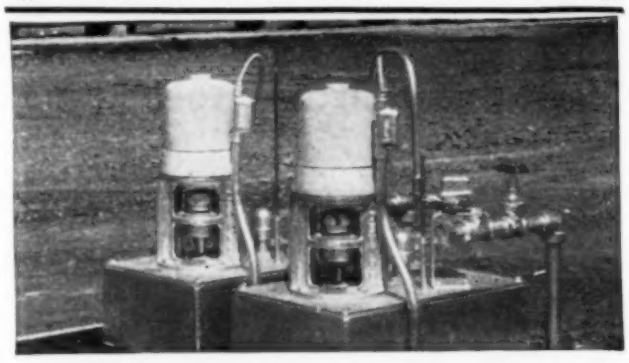
For interchangeability: Always specify "PALMER" Separable sockets as they are interchangeable for Dial or Industrial type Thermometers.

WRITE FOR CATALOG INFORMATION

PALMER THERMOMETERS, INC., Cincinnati 12, Ohio

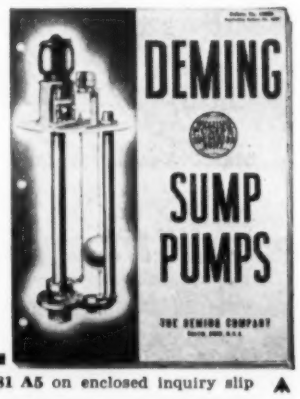
Mfrs. of Industrial Laboratory Recording and Dial Thermometers

▲ For more details circle NED-280 A5 on enclosed inquiry slip ▲



HIGH EFFICIENCY SUMP PUMPING

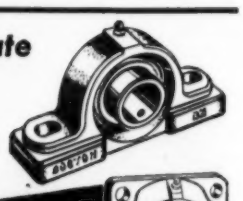
Above view shows two Deming Vertical Sump Pumps installed as a Duplex Unit. As conditions require, either pump can be used alone, or in sequence, or both at the same time. Modern features of these pumps insure high efficiency, low cost operation and long life. Sizes range from 1 to 10 inch discharge with capacities up to 3000 GPM and heads up to 140 feet. Write for BULLETIN NO. 4600-A.

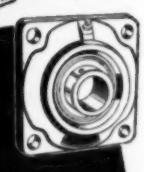


THE DEMING COMPANY
520 Broadway • Salem, Ohio

▲ For more details circle NED-281 A5 on enclosed inquiry slip ▲

How cost-wise buyers rate SHAFT SUPPORTS





GOOD BETTER ✓BOSTON Gear

Bronze or Ball Bearing PILLOW BLOCKS FLANGED CARTRIDGES

IN STOCK AT 92 BOSTON Gear DISTRIBUTORS at Factory Prices

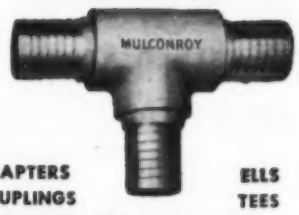
Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the Distributor nearest you.

◀ Get this Catalog . . . lists 5112 standardized machine parts . . . your reliable "textbook" of drive design and maintenance. Ask your BOSTON Gear Distributor, or write request to Boston Gear Works, 69 Hayward St., Quincy 71, Mass.

▲ For more details circle NED-282 A5 on enclosed inquiry slip ▲

METAL FITTINGS
For Flexible
PLASTIC PIPE...

Made exactly for Plastic Pipe Sizes. Assure easily-made, efficient, durable connections on every type of installation. Electroplated steel or Brass. *Ask your Distributor, or write for illustrated folders.*



ADAPTERS ELLS
COUPLINGS TEES
WELL-SEAL ELLS and PRIMING TEES • VENTURI JET ADAPTERS UNDERGROUND SPRINKLER ELLS AND TEES • WATER MAIN ADAPTERS, ETC.

"MULCONROY *Starts...* WHERE OTHERS *Stop!*"

MULCONROY COMPANY Since 1887
5331 JEFFERSON ST., PHILADELPHIA 31, PA.

▲ For more details circle NED-283 A5 on enclosed inquiry slip ▲

This little lug → saves time on-the-job

BAL TOTE BOXES
Don't Jam When Nested

That metal lug on the tapered sides does it—won't permit Tote Boxes to jam no matter how hard they're slammed together. It speeds materials handling!

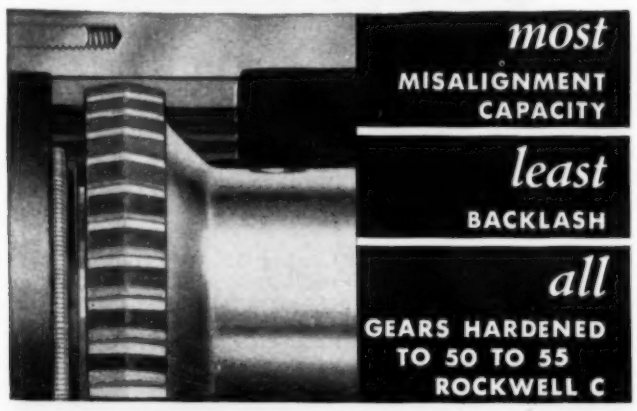
You get other benefits, too, from Bal's construction: lightweight, hard vulcanized Aerofibre; strong riveting throughout; and rust-protected reinforcements where they're needed. Results? . . . long-time satisfaction.

Write for complete catalog

SINCE 1898 william BAL corporation 11 JOHNSON ST. NEWARK 5, N. J.

▲ For more details circle NED-284 A5 on enclosed inquiry slip ▲

AJAX DIHEDRAL
COUPLINGS

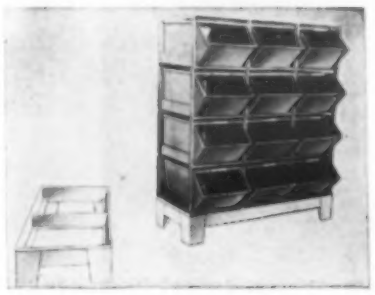


Exclusive Ajax Dihedral tooth shape provides for maximum misalignment with tooth clearance (backlash) kept to oil film requirements. Positive oil seals keep lubrication in and dirt out. Write for catalog.

AJAX FLEXIBLE COUPLING CO. INC.
Incorporated 1920
WESTFIELD, NEW YORK

▲ For more details circle NED-285 A5 on enclosed inquiry slip ▲

BIN RACK BASES
facilitate handling and storage

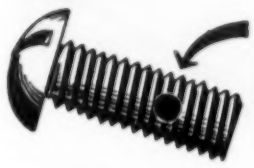


Movable bases are now available for various quantities of all sizes of Stackbin-Stackrack combinations. Units lock to bases for safe, easy handling by fork trucks. Bases also improve housekeeping, simplifying cleaning. Underclearance of 8½ in. affords room for sweeping and entry of forks for handling by lift trucks. Made by **Stackbin Corp.**, 1081 Main St., Pawtucket, R. I.

▲ For more details circle NED-286 A5 on enclosed inquiry slip ▲

SELF-LOCKING SCREWS
reduce faucet repair time

Ten available sizes of this self-locking faucet washer screw will handle faucet repair jobs normally requiring 37 screw sizes. Screws are made of corro-

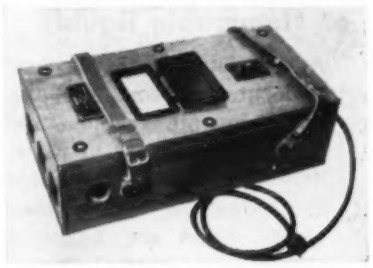


RESILIENT NYLON PLUG PERMANENTLY EMBEDDED IN SCREW THREADS LOCKS SCREW FIRMLY IN DESIRED POSITION

sion-resisting Monel and have small nylon plug set into the shank. Plug firmly grips faucet spindle threads, locking screw in desired position. Yet, screw can be easily removed and is reusable. Plumber does not have to waste time selecting screw of exactly right length to set against bottom of screw hole. Damage to washer is minimized. Made by **J. A. Sexauer Mfg. Co.**, Dept. 39, 2503-05 Third Ave., New York 51, N. Y.

▲ For more details circle NED-287 A5 on enclosed inquiry slip ▲

INSULATION TESTERS
triple and single voltage models

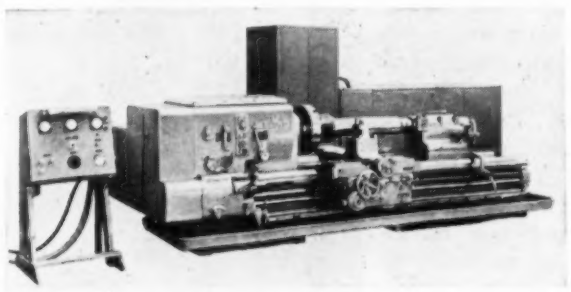


Rectifier - operated Megger insulation testers are available in two ranges: up to 100,000 megohms at 5000 v dc with 1000 and 2500-v intermediate ranges; and up to 200,000 megohms at 10,000 v with no intermediate voltage ranges. They are useful for field tests on bushings, generators, transformers and cables, among other applications. Operation is from any 115-v, 60-cycle lighting circuit. When alternating current input switch is either switched off or supply plug is withdrawn, the line and earth output terminals are automatically short circuited through a current limiting resistance. Direct current power supplies include selenium rectifiers and constant voltage transformers. Made by **James G. Biddle Co.**, Dept. 21-2023, 1316 Arch St., Philadelphia 7, Pa.

▲ For more details circle NED-288 A5 on enclosed inquiry slip ▲

HEAVY DUTY ENGINE LATHE
32-in. model has 125-hp motor

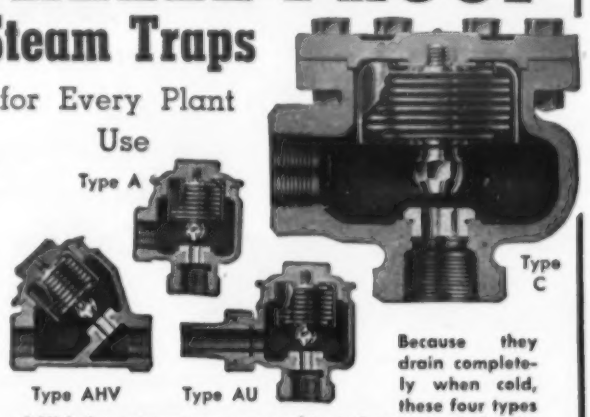
Fifty-six feeds from 0.002 to 0.250-in. and infinitely variable speeds from 42 to 1400 rpm are available on this 32-in. heavy duty engine lathe. Equipped with



a 125-hp motor, it has been tested to show 118 hp consumed at the cut. Standard features include four-directional power rapid traverse built into the apron; one-piece apron and hardened rack; totally enclosed quick-change box; hardened and ground steel bed ways; and trust-lock tailstock. Made by **R. K. LeBlond Machine Tool Co.**, 1950 Edwards Rd., Cincinnati 8, O.

▲ For more details circle NED-289 A5 on enclosed inquiry slip ▲

NICHOLSON MAKES
FREEZE-PROOF
Steam Traps
for Every Plant Use



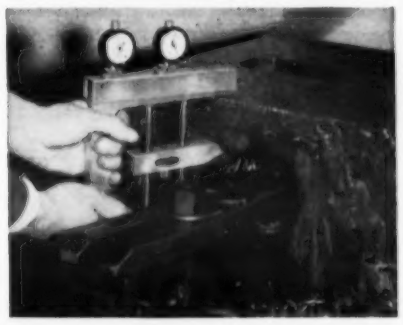
Because they drain completely when cold, these four types of Nicholson steam traps are positively freeze-proof. Can be freely installed outdoors. Universally recommended for use in lines which need not be in continuous use during cold weather, because they are freeze-proof and because their 2 to 6 times average drainage capacity results in minimum heat-up time. The non-air binding feature of Nicholson traps also notably facilitates heat transfer in severe weather. Size ¼" to 2"; pressure to 300 lbs.

BULLETIN 853
162 Oregon St., Wilkes-Barre, Pa.

W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS

▲ For more details circle NED-290 A5 on enclosed inquiry slip ▲

MAKE HARDNESS TESTS ANYWHERE



NOW make "on the spot" Rockwell tests with Riehle Portable Hardness Testers. Riehle portables test inside and outside surfaces of parts inaccessible or difficult to test on bench machines. Riehle testers weigh but a few pounds and come in handy carrying cases. They save the expense and time of cutting samples from heavy parts. Riehle Portable Hardness Testers eliminate conversion errors by using standard diamond indentors with standard Rockwell loadings. Scales: A, B, C, D, F and G. For specimens up to 12" diameter or thickness.

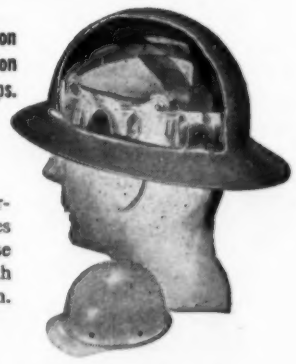
FREE BULLETIN — WRITE DEPT. NED--155

RIEHLE TESTING MACHINES
Division of American Machine and Metals, Inc., East Moline, Ill.

▲ For more details circle NED-291 A5 on enclosed inquiry slip ▲

NEW... Scientific Advance in Head Protection

Internal as well as External head protection achieved by patented "geodetic" suspension in New Willson Super-Tough® Hats and Caps.



Write today for the new Willson Super-Tough hat bulletin which describes in detail the "why and how" of these new Willson Super-Tough hats with the advanced, patented suspension.

—Clip and mail coupon for latest head safety information—

Please send me your bulletin on the new Willson Super-Tough® Hats and Caps with "geodetic" crown straps and "pneumatic" head band.

*Name*_____ *Title*_____
*Company*_____
*Address*_____
*City*_____ *Zone*____ *State*_____

More Than 300 Safety Products Carry This Famous Trademark
WILLSON

WILLSON PRODUCTS, INC., 219 Washington Street • Reading, Penna.

▲ For more details circle NED-292 A5 on enclosed inquiry slip ▲

HERE'S PROOF

You'll get Better Service ...Longer Life with Rex Z-Metal Drive and Conveyor Chains

What's your problem . . . corrosion, abrasion, heavy pounding? What's causing your chain drives and conveyors to fail prematurely? This informative booklet has your answer . . . shows you how you can solve those problems with Rex® Z-Metal Chains. It proves why Z-Metal resists abrasion . . . corrosion . . . takes heavy pounding . . . with plenty of actual case histories to back up our story.

Why not send for your copy today—ask for Bulletin No. 53-56 . . . see how you can get far better service *at a saving.*

4686 W. Greenfield Ave., Milwaukee 1, Wis.

CHAIN BELT COMPANY

District Sales Offices and Distributors in all principal cities.

▲ For more details circle NED-293 A5 on enclosed inquiry slip ▲

Cut fastening costs up to 80% on heating and air conditioning installations..with the REMINGTON STUD DRIVER

"It saves us money on every fixture we install" —that's the kind of report we're getting every day on the Remington Stud Driver. Big savings just naturally result from the amazing speed of this powder-actuated tool. It sets as many as 5 studs a minute in steel or concrete!

You'll find real economy, too, in the fact that the Stud Driver is completely self-powered—no need for extra equipment, wires or cables. Compact and portable, the tool is designed in every way for easy handling. And since it weighs only 6 pounds, it's ideal for working overhead and in confined spaces.

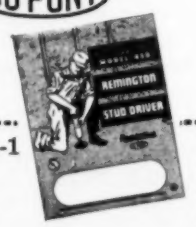
What's your fastening job? Whether it's fastening pipe to walls and ceilings or anchoring fixtures to concrete floors, you'll save money with the Remington Stud Driver. For complete information on how to cut *your* fastening costs, just send in the coupon below.

"If It's Remington—It's Right!"

Remington DU PONT

Listed & Approved by Underwriters' Laboratories, Inc.

MAIL THIS COUPON TODAY



Industrial Sales Division, Dept. N.E.D.-1
Remington Arms Company, Inc.
Bridgeport 2, Connecticut

Please send me a free copy of the new booklet showing how I can cut my fastening costs.

Name _____
Position _____
Firm _____
Address _____
City _____ *State* _____

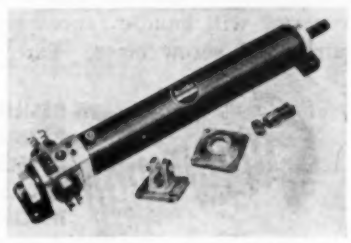
▲ For more details circle NED-294 A5 on enclosed inquiry slip ▲

TOOL HOLDERS
with adjustable adapter shank

Morse taper sleeve, straight bore or tap collets can be furnished with line of adjustable adapter shank Toolflex tool holders. They can operate on centers as close as ⅞-in. Oil, heat and wear-resistant neoprene insert provides universal float that corrects for both parallel and angular misalignment and absorbs shock. This prevents bell mouthing and oversized holes or torn and oversized threads. Made by **Burg Tool Mfg. Co.,** P. O. Box 48, Gardena Sta., Gardena, Calif.

▲ For more details circle NED-295 A5 on enclosed inquiry slip ▲

VALVE-IN-HEAD CYLINDERS
air and electrically operated types



Stroke of any length up to 60 in. and 2 and 3-in. bores are available in Allenair model SVA and SVE valve-in-head cylinders. Made with or without adjustable cushions, they feature integral slider type valves in the rear head which are air or electrically operated. Slider is actuated by a spool whose instantaneous motion is achieved by momentarily bleeding air from one end of it or the other. Model SVE shown has two control solenoids for 110 or 8-v operation. Two bleeder valves achieve actuation on model SVA air operated unit. Choice of foot or flange mounts, swivel brackets and rod clevis is available for mounting in any position. Made by **A. K. Allen Co.,** 57 Meserole Ave., Brooklyn 22, N. Y.

▲ For more details circle NED-296 A5 on enclosed inquiry slip ▲

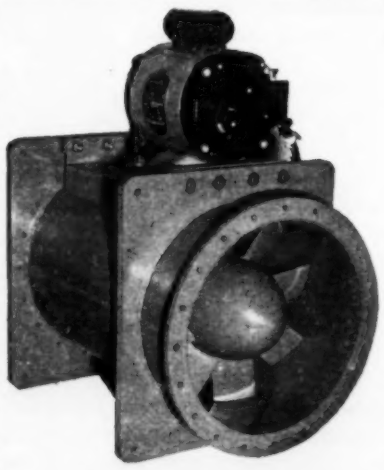
SAFETY CAN
for explosive or flammable liquids

Approved by Underwriters' Laboratories for handling or storing oil, gasoline and similar hazardous liquids, line of safety cans is usable in industrial and other plants. Sizes are 1 and 2 qt, and 1, 2½ and 5 gal. Three smallest sizes have one-hand trigger-grip handle, while the two largest cans have free-swing handles. All have self-adjusting protective guard cap which prevents leakage if can is upset. Finish is glossy baked red enamel on 24-gage terne steel. Made by **Eagle Mfg. Co.,** Charles St., Wellsburg, W. Va.

▲ For more details circle NED-297 A5 on enclosed inquiry slip ▲

AXIAL TYPE BLOWER
for corrosive air, fumes, gases

Unplasticized polyvinyl chloride used in construction of the model Ta-14 Tubeaxial blower makes it suitable for expelling corrosive air, fumes and gases. All-plastic impeller blade has an aerodynamically balanced spinner cap for vibration - free high speed operation. Drive shaft, pulley, belts and sealed bearings are totally encased. Blower can be installed vertically or horizontally. It has a ¾-hp, three-phase motor and is mounted on a steel pedestal which may also have a protective coating. Rating of blower is 260 cfm at 875 rpm to 2400 cfm at 2500 rpm. Made by **Industrial Plastic Fabricators, Inc.,** 32 Endicott St., Norwood, Mass.



▲ For more details circle NED-298 A5 on enclosed inquiry slip ▲

DERBY "152"

A DERBY FIRST
Stainless steel cut-off blade, guaranteed for life of machine.

MOST TALKED ABOUT GUMMED TAPE DISPENSER ON THE MARKET!

Derby spent 2 years designing, building and testing the fabulous Super "152". It's a rugged, efficient, gummed tape dispenser with so many big machine features, so many unusual Derby exclusives, that its low price is truly sensational! Dispenses 1" to 3" width tapes in predetermined lengths up to 30".

See your dealer or write Dept. NED

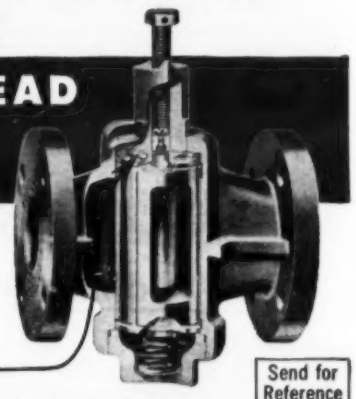
DERBY SEALERS INC. Derby, Conn.

▲ For more details circle NED-299 A5 on enclosed inquiry slip ▲

No. 1* of 12 REASONS WHY YOU SHOULD BUY AND USE

LOW PRICED

HOMESTEAD *Lubricated* **PLUG VALVES**



*EVERY HOMESTEAD LUBRICATED PLUG VALVE HAS A REINFORCED TEFLON HEAD SEAL

. . . which will not cold-flow, and which provides a positive seal against leakage—even under 200 pounds pressure per square inch, *without lubrication.*

This is only ONE REASON WHY you should buy and use, *low priced* HOMESTEAD LUBRICATED PLUG VALVES.

Send for Reference Book #39

HERE ARE ALL TWELVE

1. Reinforced Teflon packing ring.
2. Completely controlled high-pressure lubricant system.
3. 100% pipe area and venturi patterns.
4. No spring torsional stress.
5. No mechanical adjustments.
6. Two lubricants handle most services.
7. Extremely close tolerance between sealing surfaces.
8. Triple head-seal with Lubricant and Teflon packing ring.
9. Plug floated on Teflon washer.
10. Leak-proof double-ball and lubricant-sealed check valve.
11. Full-threaded screw assures clean lubricant.
12. Extruded lubricant shows a full protecting system.

HOMESTEAD VALVE MANUFACTURING CO.
Serving Since 1892

P. O. BOX 84 CORAOPOLIS, PA.

▲ For more details circle NED-300 A5 on enclosed inquiry slip ▲

Get the Facts on new efficiency and economy in small parts handling with... NESTIER

New NesTier Catalog DN-1000 contains the answer to small parts handling problems of all types . . . gives a comprehensive picture of the savings and increased efficiency possible when you handle parts and products the NesTier way. Standard NesTier line of boxes and baskets . . . as well as newly-developed equipment that quickly converts NesTier units into an integrated materials handling system . . . is illustrated and described.

WRITE TODAY FOR YOUR COPY OF CATALOG DN-1000.

NESTIER ® . . . First in small parts handling

The Chas. Wm. Doepke Mfg. Co., Inc.

8884 BLUE ASH ROAD • ROSSMOYNE, OHIO

C-201-DN

▲ For more details circle NED-301 A5 on enclosed inquiry slip ▲

this time-study saves you money!

BUSINESSES SAVE HOURS EACH DAY

you save 16 seconds every time you press a button

Actual time studies taken in hundreds of businesses show that an average of 18 seconds is required to make an "inside" speech contact through the switchboard. With *your own* AMPLICALL "clear line" *internal* communication system —you get *2-second speech contact* within and between departments. AMPLICALL frees busy switchboards for important outside calls —keeps personnel *on the job*, keeps talk terse—saves hours each day for the average business. AMPLICALL saves you money—pays for itself. There is a system to fit your special needs. Get the full facts today!

ELECTRONIC **AMPLICALL** INTERCOMMUNICATION

SEE YOUR PHONE BOOK
For your nearest AMPLICALL specialist, look under "Intercommunication" in your classified phone directory—or write direct for full information.

RAULAND-BORG CORPORATION
3515-D Addison Street, Chicago 19, Illinois

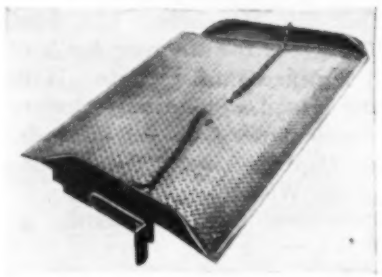
▲ For more details circle **NED-302 A5** on enclosed inquiry slip ▲

ABRASIVE WHEELS
combine fast cutting and long life

Strength to withstand heavy duty grinding is feature of resinoid bonded abrasive wheels which have multi-layer reinforcement of glass fibers and treated nylon mesh. Wheels are capable of fast, deep cutting and will stand up under harsh dressing action. Range of grades for various grinding jobs is available. Made by **Bay State Abrasive Products Co.**, 1 Union St., Westboro, Mass.

▲ For more details circle **NED-305 A5** on enclosed inquiry slip ▲

STEEL LOADING RAMPS
in capacities up to 15,000 lb



Improved steel ramps in both car loading and truck loading safety types feature all - welded construction, safety side guards and positive locking. Car loading units are made in 15,000-lb capacities and in wide range of sizes. Truck loading ramps are offered in capacities from 4000 to 8000 lb; are 48 in. wide and from 36 to 72 in. long. Special designs are available to accommodate trucks which are higher or lower than dock level. Made by **Penco Engineering Co.**, Dept. TR, 25 California St., San Francisco 11, Calif.

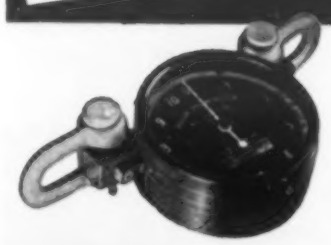
▲ For more details circle **NED-306 A5** on enclosed inquiry slip ▲

KNOBS & HANDLES
24 new sizes and shapes stocked

Additional group of 24 stock molds of different shapes and sizes has been added to line of stock molded plastic knobs and handles already available. Virtually endless variations from stock molds can be obtained to meet specific requirements. "Deep-relief" branding methods permits markings, graduations and designs on the knobs and handles, available for use on electrical appliances, radios, instrument panels, testing equipment and other devices. Made by **Rogan Brothers**, 8011 N. Monticello Ave., Skokie, Ill.

▲ For more details circle **NED-307 A5** on enclosed inquiry slip ▲

DILLON DYNAMOMETERS
remove all guesswork from tension or stress problems



WIDE CAPACITY RANGE
500 to 100,000 lbs The perfect lab or field instrument for showing tension or stress. Hundreds of uses. Small—Light —Accurate—Low cost. Write today for illustrated bulletin.

√ Testing Wrecking Truck Winch and Boom. Modern automobile wrecking trucks are often called upon to lift and pull exceedingly heavy loads. Above, the DILLON DYNAMOMETER is checking these factors in a new model wrecking truck manufactured by the Ashton Power Wrecker Equip. Co., Inc. Pull is against a heavy semi-trailer. Tests like these on heavy equipment are very easy with a DILLON DYNAMOMETER.

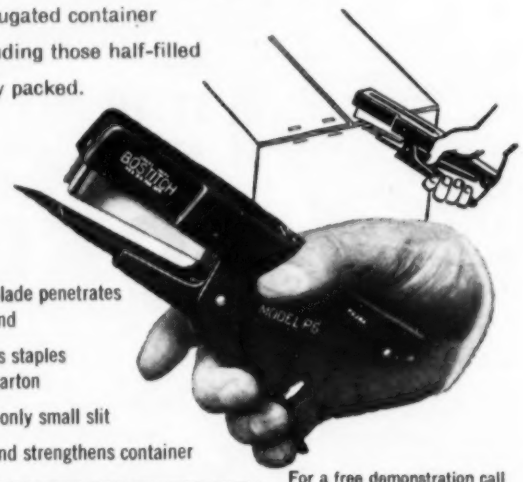
√ Here is a DILLON DYNAMOMETER at the Ford Motor Co. in Dearborn, Mich. employed to "buckle" a car frame through ordinary turnbuckle. In this way, the Body and Frame Section laboratory was able to determine the load necessary to take full shock absorber punishment.

W. C. DILLON & CO., INC.
PRECISION INSTRUMENTS FOR PRECISION TESTING
14620NE KESWICK ST., VAN NUYS, CALIF. (Suburb of Los Angeles)

▲ For more details circle **NED-309 A5** on enclosed inquiry slip ▲

New Bostitch Stapling Plier with a Pointed Blade

For fastening almost any cardboard or corrugated container including those half-filled or loosely packed.



- Sharp blade penetrates easily and
- Clinches staples inside carton
- Leaves only small slit
- Seals and strengthens container

FASTEN IT BETTER AND FASTER WITH

BOSTITCH
STAPLERS AND STAPLES

For a free demonstration call your local Bostitch representative. He's listed under "Bostitch" in your telephone directory. Or write:
Bostitch
681 Mechanic St.
Westerly, R. I.

▲ For more details circle **NED-303 A5** on enclosed inquiry slip ▲

HIGH PRESSURE PUMP

air driven
FOR PRESSURES TO 30,000 PSI

Measures 8¼" wide x 9⅝" deep

Boost 100 PSI. air pressure to 10,000 PSI. fluid pressure for $173.25 (FOB Gardena, Calif.). Eight standard models for output fluid pressures of 1,000 to 30,000 PSI. Special models for lower or higher pressures.

Applicable wherever low volume output at high pressures is the requirement. For oil or water service. Complete power packages also available. Send for bulletins.

SPRAGUE
Engineering Corporation
1144 WEST 135TH STREET, GARDENA, CALIFORNIA

▲ For more details circle **NED-310 A5** on enclosed inquiry slip ▲

A Gear Motor for SMALL APPLICATIONS

Our line of small induction motors is designed for applications where small power can be converted to considerable torque at slow output shaft speed. Hundreds of thousands are in use today for operating relays, vending, amusement, coin operated machines, motion displays, combination rotisserie and broilers, etc.

These motors are made in three basic sizes—speeds from 1 to 200 r.p.m. with proportional torque from 5 to 500 in. ounces. Write today for descriptive information, prices and data sheet.

MotoRESEARCH COMPANY
1600 JUNCTION AVENUE
RACINE, WISCONSIN

Designers and Manufacturers of
SPECIAL INDUCTION MOTORS

★ For more details circle **NED-304 A5** on enclosed inquiry slip ★

Free 12-PAGE BOOKLET
helps you choose the Right HOOD Glove for Each Job!

This useful Guide shows the comparative wear and chemical resistance of Hood Neoprene, Rubber and Plastic-Coated Gloves. It illustrates and fully describes the complete line of Hood Industrial Gloves . . . the choice of industry for every job

Write for your copy today

HOOD RUBBER CO.
A division of the B. F. Goodrich Company
Watertown, Mass.

▲ For more details circle **NED-308 A5** on enclosed inquiry slip ▲

UNITABLE®
BELT CONVEYOR

For Assembly - Inspection - Packaging

The most ADAPTABLE portable conveyor you can find. Exclusive "unitized" design 10' to 80' lengths. Write for UNITABLE Bulletin now.

CONVEYOR SPECIALTY COMPANY INC.
37 Newport Avenue
North Quincy 71, Mass

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New! VARY-TALLY

Multiple-Unit Reset Counter

Single units, or any combination up to 6 banks high, 12 units wide. Write

VEEDER-ROOT Inc.

HARTFORD 2, CONN.

▲ For more details circle NED-312 A5 on enclosed inquiry slip ▲

Borroughs and ONLY

BORROUGHS

*UNITIZED flexi

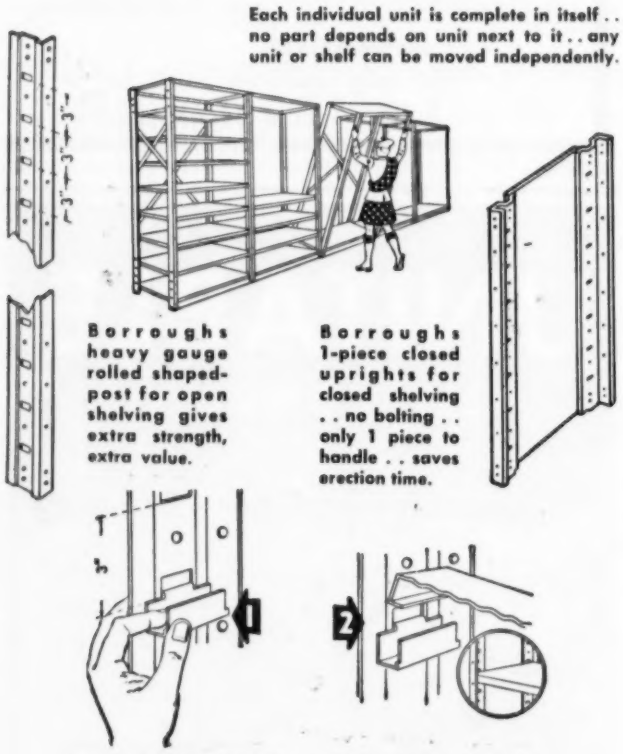
STEEL SHELVING

offers so many exclusive features

Borroughs Steel Shelving is more than uprights and shelves. It is the most flexible and most ingenious steel shelving ever produced. There is nothing comparable to it on the market. Its simplicity seems almost unbelievable. Its flexibility saves storage space and labor the whole year around. No other shelving gives so much value for so little cost.

* every unit is a unit within itself!

Each individual unit is complete in itself . . no part depends on unit next to it . . any unit or shelf can be moved independently.



Borroughs heavy gauge rolled shaped-post for open shelving gives extra strength, extra value.

Borroughs 1-piece closed uprights for closed shelving . . no bolting . . only 1 piece to handle . . saves erection time.

INSERT SHELF SUPPORT BRACKET . . no fumbling with studs, bolts, nuts or lock washers.

TILT SHELF INTO SUPPORT BRACKET . . and you're finished. Shelf is now ready for loading.

send for Catalog

BORROUGHS MANUFACTURING COMPANY

A Subsidiary of American Metal Products Company of Detroit

3002 NORTH BURDICK amp KALAMAZOO, MICHIGAN

▲ For more details circle NED-313 A5 on enclosed inquiry slip ▲

FORK LIFT ATTACHMENT

lifts ¾-ton load to 7-ft height

Readily mounted on the model R-15 Moto - Bug industrial truck, this fork lift attachment will lift a 1500-lb load to a height of 7 ft in 14 seconds. Originally introduced as a power wheelbarrow, the Moto-Bug uses wide range of front end attachments for all types of materials handling. Also available are 15-cu ft hopper and flat-bed platform. Other Moto-Bug features are 8.3-hp gasoline engine, direct drive, automotive steering and speeds to 6 mph. Fork lift attachment has mast which can be tilted 10 degrees toward rear for load carrying stability and 2 degrees forward to aid in picking up and releasing a load. Standard forks are 30 in. long and adjustable from 6 to 32 in. wide. Made by **Kwik-Mix Co.**, Dept. N-1154, 3026 W. Concordia Ave., Milwaukee 16, Wis.

▲ For more details circle NED-314 A5 on enclosed inquiry slip ▲

POLYSTYRENE CAPACITORS

capacity drift less than 0.1 per cent over range of —80 to 75° C

Stability of polystyrene capacitors has been increased by new production technique which involves series of heating and aging cycles. Room temperature capacity drift is less than 0.1 per cent over −80° to 75° C range. Temperature coefficient of capacitance is now less than 1.5 per cent overall capacity change in −60 to 85° C range. Formerly it was about 2 per cent.

Increased stability enables capacitors to be used as standard condensers in decade condenser boxes; as charge storage condensers where self time constants of 5000 hours or more is required; and in resistance capacitance networks. Line of 22 canned capacitors, as shown at top, range from 0.1-mfd at 1000 v dc to 25 mfd at 100 v dc. The two tubular capacitors shown at bottom represent 22 units ranging from 0.001-mfd at 1000 v dc to 1 mfd at 100 v dc. Made by **Condenser Products Co.**, 140 Hamilton St., New Haven, Conn.

▲ For more details circle NED-315 A5 on enclosed inquiry slip ▲

ELASTICONE® GUIDE PIN COVERS

CUT DIE COSTS 25%

Low-costing Elasticone Guide Pin Covers reduce die breakage; protect man & machine — closes the gap between pins and bushings.

Just snaps into place—no installation costs. Manufactured in stock sizes.

Write for full information and literature.

CENTRAL

2208 EAST HUNTINGDON ST. PHILA. 25, PA.

CENTRAL SAFETY EQUIPMENT COMPANY

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save with standard

UNBRAKO

SOCKET CAP SCREWS

Fully formed threads, controlled fillet, continuous grain flow, and heat treated alloy steel give unusual strength. Knurled heads speed assembly, don't slip in oily fingers. Accurate hex sockets insure snug wrench fit. Standard sizes—#4 to 1" in a full range of lengths—are stocked by industrial distributors. Write for UNBRAKO Standards. STANDARD PRESSED STEEL Co., Jenkintown 24, Penna.

UNBRAKO SOCKET SCREW DIVISION SPS JENKINTOWN PENNSYLVANIA

▲ For more details circle NED-317 A5 on enclosed inquiry slip ▲

FOR DEFENSE INDUSTRY MACHINIST WORKMAN FARMER

1ST IN METAL TOOL BOXES

CASES—CHESTS—CABINETS

Here are the world's finest metal boxes. They're better constructed—better looking. Known for their fine materials—workmanship—attractive design. These boxes outlook—outlast—outsell competition.

WATERLOO METAL BOXES AND CHESTS

Write for FREE book, including complete information.

Waterloo

VALVE SPRING COMPRESSOR CO. WATERLOO, IOWA

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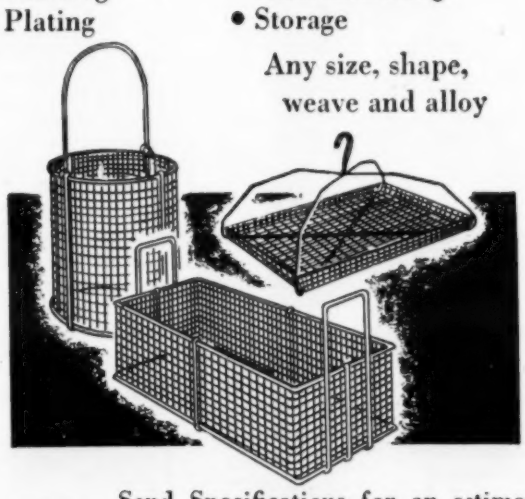
BASKETS

for all industrial uses

- Dipping
- De-greasing
- Pickling
- Plating
- Anodizing
- Heat-Treating
- Bulk Handling
- Storage

Any size, shape, weave and alloy



Send Specifications for an estimate. Department 11

THE C. O. JELLIFF MANUFACTURING CORP. SOUTHPORT, CONN.

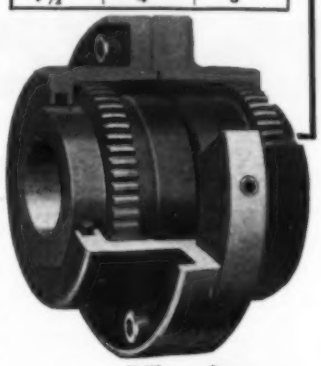
▲ For more details circle NED-319 A5 on enclosed inquiry slip ▲

Now you can choose a smaller, lighter, lower-cost coupling

New LINK-BELT Geared Flexible Couplings have greater bore capacity than other makes

Approx. outside dia. (in.)	Max. bore of Link-Belt coupling (in.)	Largest bore available in most leading makes (in.)
4-9/16	1 1/2	1 3/8
6	2 1/8	1 1/2
7	2 3/4	2
8 3/8	3 1/2	2 1/2
9 1/2	4	3

With no sacrifice of load capacity, the new Link-Belt Geared Flexible Coupling is designed to accommodate a larger shaft for a given outside diameter. That means you can often apply it where radial clearances are too close for other makes. What's more, the Link-Belt design provides for parallel and angular misalignment with minimum backlash. Get all the facts from your Link-Belt sales office or distributor. Or write for Folder 2375 to Link-Belt Company, 220 S. Belmont Ave., Indianapolis 6, Ind.

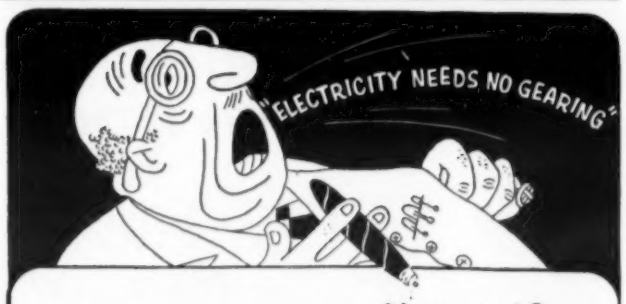


13,402

LINK-BELT

GEARED FLEXIBLE COUPLINGS

▲ For more details circle **NED-320 A5** on enclosed inquiry slip ▲



Don't be misled – use a Mechanical Drive for a Mechanical Job!

GET **Graham** variable speed drives

- **ULTIMATE in SIMPLICITY and COMPACTNESS**—only the Graham is a straight line extension of a standard induction motor—or available without motor.
- **UNLIMITED SPEED RANGE**—from any desired maximum speed to zero, including reverse if wanted without stopping motor.
- **UNMATCHED ACCURACY**—of speed setting and resetting and speed holding.
- **NO PERISHABLE PARTS**—such as belts or tubes, requiring periodic replacement.
- **PROVED PERFORMANCE**—Fifteen years satisfactory use as standard equipment.
- **LOW COST**—a better job for less money.

Prompt Delivery on Standard Models

GRAHAM TRANSMISSIONS, INC.
Dept. NED, Menomonee Falls, Wis.

GET **Graham** *most reliable variable speed drive made*

ENGINEERED and RATED for 'ROUND the CLOCK SERVICE

▲ For more details circle **NED-321 A5** on enclosed inquiry slip ▲

TRACTOR LOADING ATTACHMENT has 1800-lb capacity, lifts 10 ft

Standard International Harvester Super C tractor, either tricycle or wide front end type, is converted to an industrial loading and transporting vehicle by the Trac-Loader. Unit is available with either 10 cu ft dirt and gravel bucket or 12½ cu ft bucket with combination forks for log, timber and pipe handling. It has capacity of 1800 lb with either equipment and lifts to height of 10 ft. Unit carries load over large tractor wheels, and steering is done by trailing wheels. Features include hydraulic dumping, good vision and self-leveling action on forks or bucket which eliminates spilling of material. Loader is equipped with bronze bushings on all wearing surfaces. Made by **Piper & Paine**, Dept. N, Nunda, N. Y.

▲ For more details circle **NED-322 A5** on enclosed inquiry slip ▲

MILLING MACHINES have 16-in. longitudinal, 10-in. across and 17-in. vertical movements

Standard ranges of Toolmaster line of milling machines are 16-in. longitudinal, 10-in. transverse and 17-in. vertical movement. Machine, intended for toolroom, repair depot, tool and die, pattern and other metalworking uses, is offered in style 1A with manual feed to quill, 1B with power feed to quill and 1C (illustrated) with heavy duty head.

Styles 1A and 1B have either ¾ or 1-hp pancake-type motor integral with spindle head and choice of spindle speed ranges of 108 to 2825, 140 to 3800 and 215 to 5650 rpm. Their eight individual speeds are selected by changing one or two belts. Style 1C has can-type 2-hp motor built into overarm and eight lever-selected speeds ranging from 100 to 1530 rpm. Spindle head can be swiveled right or left for taking cuts at any angle up to 90 degrees.

Several attachments are available, including self-contained, motor driven shaper which mounts on free end of overarm. Because of turret design, it can remain so mounted as long as desired. Made by **Cincinnati Milling Machine Co.**, Marburg & South Sts., Cincinnati 9, O.

▲ For more details circle **NED-323 A5** on enclosed inquiry slip ▲

NOW! Boost Output and Quality of Plastic Film and Sheet

New Sarcotrol Unit automatically maintains uniform roll temperatures

Temperature variations across the faces of water-jacketed cylinders ... so often the cause of production slow-downs because of product imperfections . . . can now be completely eliminated with this new Sarcotrol Heating and Cooling Unit.

By recirculating temperature-controlled water through roll jackets at high velocity, Sarcotrol maintains an even temperature across the entire face of the roll. You can increase production and AT THE SAME TIME MAINTAIN QUALITY.

Sarcotrol Heating and Cooling Unit available with 1, 2 or 3 independent circulating water systems.

•

Operation is simple and entirely automatic. One knob changes temperature control setting. Controlled temperature is continuously indicated on easy-to-read dial.

Write today for Case History 154 describing how a leading plastics firm increased production after installing a Sarcotrol on chill rolls. 2093F

SARCO COMPANY, INC.
Empire State Bldg., N.Y. 1, N.Y.

▲ For more details circle **NED-324 A5** on enclosed inquiry slip ▲

DUST

COLLECT IT WITH Hammond DUSKOLECTORS

CYCLONE

FILTER

Your plant produces dust in a surprising number of locations. By collecting it at the source you:

- Provide healthier working conditions
- Protect costly machine tools
- Reduce cleaning and painting costs

Hammond Duskolectors don't cost—they pay!

Clip this page to your letterhead. Duskolector catalog with helpful engineering information and interesting installation views will be sent at once.

Hammond Machinery Builders INC
1623 DOUGLAS AVENUE • KALAMAZOO, MICHIGAN

▲ For more details circle **NED-325 A5** on enclosed inquiry slip ▲

for accurate Voltage Control of small ac machines

- No vibrating or sliding contacts to require attention.
- Special dust-proof design assures maximum protection.
- *Rocking Contact* sector gives quick regulation with small movement.
- Four simple connections and it's ready to operate.

Only a small rocking movement of the contact sector over the curved commutator is required to cover the entire regulating range. Response is fast, accurate . . . sliding friction is eliminated, wear minimized.

V-00 regulator is used on ac generators with direct-connected exciters to 157 kva at 3600 rpm. Type 221 is used on ac machines with direct-connected exciters to 438 kva at 3600 rpm. These regulators can be modified for temperature compensation, shock mounting, or other special requirements.

Ask your A-C representative, or write Allis-Chalmers, Milwaukee 1, Wisconsin, for Bulletin 14B6143A.

A-4361 *Rocking Contact is an Allis-Chalmers trademark.*

ALLIS-CHALMERS

▲ For more details circle **NED-326 A5** on enclosed inquiry slip ▲

At Last... Positive Protection Against Harmful Pigment Overspray

New Efficiency

The sensational new FLEX-A-PRENE Paint Mask keeps out paint pigments and solvents with amazing efficiency, yet it's light (just 1 ounce), comfortable and so easy to talk and breathe through you hardly know you're wearing it.

New Economy

FLEX-A-PRENE's low first cost is only part of the story. Most important savings come from its endurance in service and time saved through less frequent filter replacements. You can expect at least 100 hours of exposure before replacement is necessary.

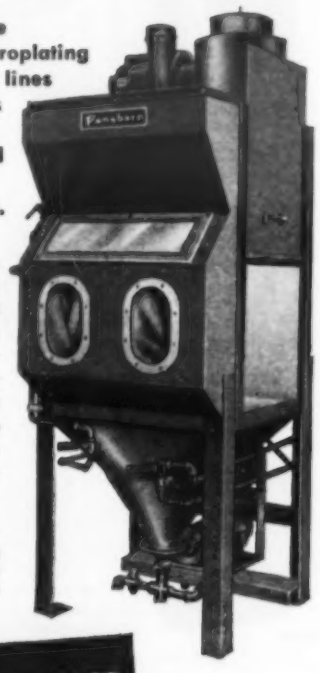
Sample: $1.50 postpaid

FLEXO PRODUCTS, INC. Cleveland 13, Ohio
(formerly, The Goggle Parts Co.)

▲ For more details circle **NED-327 A5** on enclosed inquiry slip ▲

Pangborn HYDRO-FINISH

- deburrs • removes scale
- prepares surfaces for electroplating
- removes, blends grinding lines
- finishes threaded sections for fit
- improves die making and maintenance
- improves cutting tool life.



PANGBORN Hydro-Finish does all these jobs and more! Fine mesh abrasives suspended in water give you a precision finish . . . hold tolerances to .0001". Vary abrasives, air pressures, work distances, ratio of liquid to abrasive and you can do almost any finishing job faster and better!

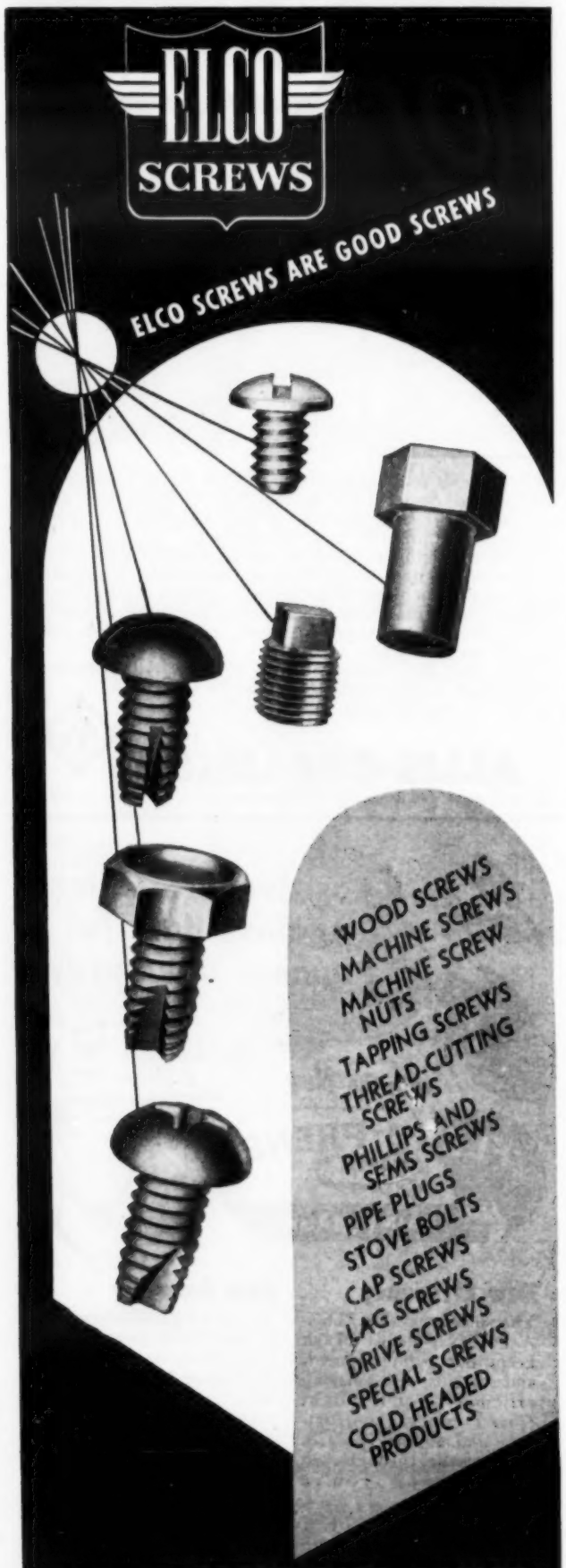
GET THE FACTS on how Hydro-Finish can save *you* money! Write for Bulletin 1400A to: PANGBORN CORPORATION, 2400 Pangborn Blvd., Hagerstown, Md.

Pangborn BLAST CLEANS CHEAPER *with the right equipment for every job*

▲ For more details circle NED-328 A5 on enclosed inquiry slip ▲

ELCO SCREWS

ELCO SCREWS ARE GOOD SCREWS



ELCO TOOL AND SCREW CORPORATION
1946 BROADWAY • ROCKFORD, ILLINOIS

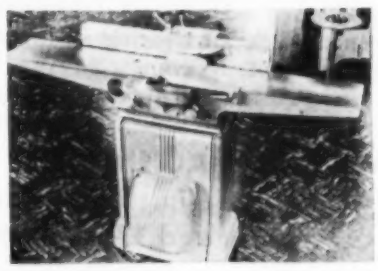
▲ For more details circle NED-329 A5 on enclosed inquiry slip ▲

RADIUS MARKER
folding unit has 24-in. span

Aluminum Dural is material used in manufacture of this contour marker, designed to fold into a pocket-sized unit measuring 9¼-in. and weighing only 8 oz. Marker has a span of 24 in. Joints in folding arms have spring washers which maintain accuracy and rigidity. Pencil holder takes round or flat pencils, soapstone or steel points. Made by **Contour Marker Corp.**, 1841½ E. Compton Blvd., Compton, Calif.

▲ For more details circle NED-330 A5 on enclosed inquiry slip ▲

8-IN. JOINTER
improved model has 5-ft bed



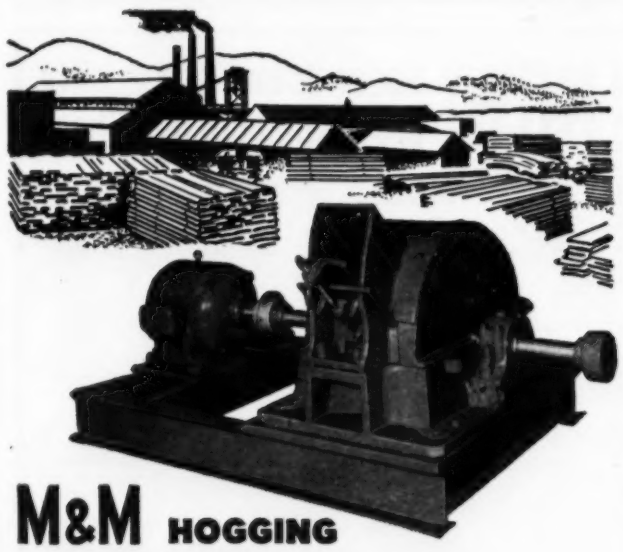
Improved Delta 8-in. jointer has a fence with plunger type stop at zero and 45 degrees right and left. Also improved is table elevating mechanism with 6-in. cast iron hand wheel for easy manipulation. Adjustable infeed and outfeed tables are redesigned to ride in dovetailed ways equipped with a take-up gib to compensate for wear. Both new and old models have 5-ft bed. Made by **Rockwell Mfg. Co.**, Delta Power Tool Div., 440 N. Lexington Ave., Pittsburgh 8, Pa.

▲ For more details circle NED-331 A5 on enclosed inquiry slip ▲

MINIATURE THREADING DIES
diameter variable over 0.004-in.

Threaded outside diameter of cutting end of these self-contained miniature threading dies allows adjustment of hex collar so that thread diameter can be varied over range of 0.004-in. Once set, die will not change, even under severe conditions of turret indexing. Collar also allows easy removal of stock broken within the die. High speed and carbon steel dies are available in sizes from 2-56 to 0000-360 with various pitches, including metric variations. Made by **Woodruff & Stokes Co.**, Dept. A, 353 Lincoln St., Hingham, Mass.

▲ For more details circle NED-332 A5 on enclosed inquiry slip ▲



M&M HOGGING EQUIPMENT

M & M Wood Hogs reduce scrap lumber to small uniform wood chips suitable for fuel, and many other purposes. Built in sizes and types to handle slabs, trim, edgings, blocks, veneer, bark and other combustible waste. Write for catalog giving complete information.

MITTS & MERRILL
1000 South Water Street • SAGINAW, MICHIGAN

84

▲ For more details circle NED-333 A5 on enclosed inquiry slip ▲

new method of **process heating** and **cooling**

***saves 50%**

- *in initial cost
- *in heating and cooling time
- *in tank space
- *in maintenance labor

Each member of your buying committee should have this book which tells how Platecoils satisfactorily solve tank heating and cooling problems . . . and at the same time save time, money and manpower.

PLATECOIL REPLACES PIPE COILS

Write for your free copy of Bulletin P57 today!

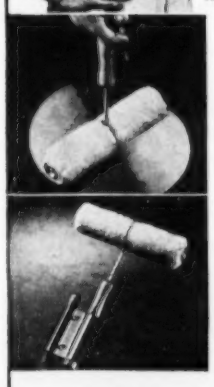
TRANTER MANUFACTURING, inc., LANSING 4, MICH.

▲ For more details circle NED-334 A5 on enclosed inquiry slip ▲

New 2-Headed Roller
cuts plant painting time 52%

BESTT DUO-MECHANIC *Industrial Rollers* designed for **PROFESSIONAL PAINTERS**

New Twin head roller furnished in four sizes!



Exclusive T construction provides perfect balance—cuts fatigue differential action eliminates skid marks. Ideal for fences—concrete—plaster—dry wall construction.

Your order will be shipped through your nearest BESTT DISTRIBUTOR

All covers are 12/16" Lambskin

8"—No. 800	$4.89
11"—No. 1100	5.40
14"—No. 1400	6.09
18"—No. 1800	6.82

Also available in heavy duty model with Hardwood Cores.

Replacement covers available in 7/16"—12/16"—16/16" Lambskin and 7/16"—12/16" Dynel.

DEPT. F

BESTT ROLLR INC. P. O. BOX 551, FOND DU LAC, WIS.

▲ For more details circle NED-335 A5 on enclosed inquiry slip ▲

New Interchangeable Gas-Electric Power Unit Gives Big Advantages

READY-POWER INTRODUCES MODEL HA-3

NO SEAT ALTERATIONS FOR 2000 TO 6000-LB. SIT-DOWN TRUCKS

QUICK, EASY ACCESSIBILITY RIGHT ON YOUR TRUCK

Only Ready-Power gives you *interchangeable* gas-electric power for electric trucks. New Model HA-3 offers important advantages for easier installation . . . quicker adjustments . . . simpler preventive maintenance. Complete range of models for all trucks. Write for information.

READY-POWER

The READY-POWER Co., 3832 GRAND RIVER AVE., DETROIT 8, MICH.

Manufacturers of Gas and Diesel Engine-Driven Generators and Air Conditioning Units; Gas and Diesel-Electric Power Units for Industrial Trucks

▲ For more details circle NED-336 A5 on enclosed inquiry slip ▲

It's practically
WATER-WHITE
a NEW
chemically resistant
baking finish—
DURACHEM

For all types of metal products from heavy hardware to fine jewelry

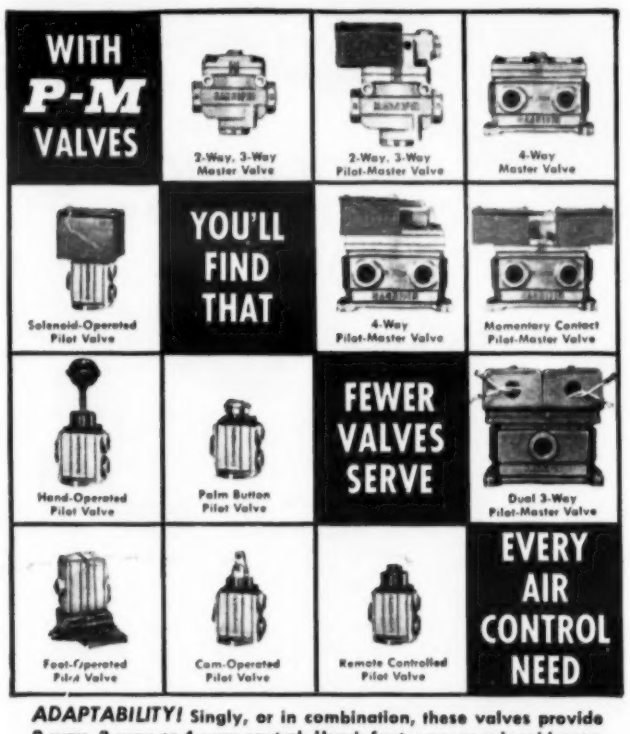
A new baking type synthetic finish—DURACHEM—combines unusual clarity with a high degree of chemical resistance. Almost water-white—remains clear after exposure to heat and sunlight—resists salt spray and perspiration. Available in colors too.

Samples and technical literature on request

OUR 75th YEAR PIONEERS M&WCo 1870 IN PROTECTION
MAAS & WALDSTEIN CO. 2116 McCARTER HIGHWAY NEWARK 4, NEW JERSEY
Midwest Div., 1658 Carroll Ave., Chicago 12, Ill.
Pacific Coast Div., Smith-Davis Co., 10751 Venice Blvd., Los Angeles 34, Calif.
MANUFACTURERS OF INDUSTRIAL FINISHES

▲ For more details circle **NED-337 A5** on enclosed inquiry slip ▲

WITH P-M VALVES



ADAPTABILITY! Singly, or in combination, these valves provide 2-way, 3-way or 4-way control. Hand, foot, cam or solenoid operated. Every pipe size from ¼" through 1¼". Write for Bulletin 231.

HANNIFIN

Hannifin Corporation, 527 S. Wolf Rd., Des Plaines, Ill.
AIR AND HYDRAULIC CYLINDERS • PRESSES • AIR CONTROL VALVES

▲ For more details circle **NED-338 A5** on enclosed inquiry slip ▲

Tools that Measure

Twist!

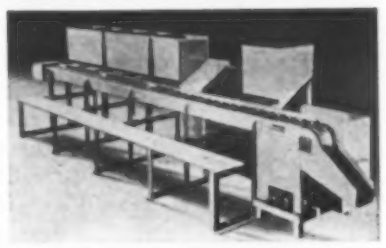
For medium to heavy torque loads, use Apco Mossberg dial type torque wrenches. These precision measuring instruments are designed to provide the utmost accuracy in ranges from 280 inch grams to 2,000 foot pounds.

There is a complete line of industry-proven Apco Mossberg torque tools for use wherever nuts, bolts, studs or screws need to be tightened to uniform or predetermined tension — or wherever there is danger of stripping threads or shearing. Write for catalog. Apco Mossberg Company, 161 Lamb Street, Attleboro, Mass.

APCO MOSSBERG COMPANY
ATTLEBORO, MASS.

▲ For more details circle **NED-339 A5** on enclosed inquiry slip ▲

ASSEMBLY CONVEYOR
table-high unit has bench and bins

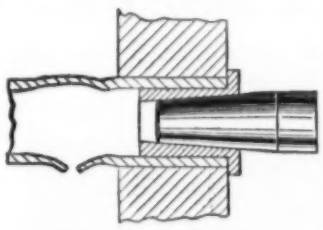


Production assembling of parts and equipment that must be assembled in sequence is facilitated with this self-contained assembly conveyor. Six bins are arranged in order so that parts are within convenient reach of operators. Conveyor is at table height so that operators can work sitting down. Conveyor belt is equipped with studs over which finished product is assembled as it moves along at preselected speed. Made by **Sage Equipment Co.**, 28 Essex St., Buffalo 13, N. Y.

▲ For more details circle **NED-340 A5** on enclosed inquiry slip ▲

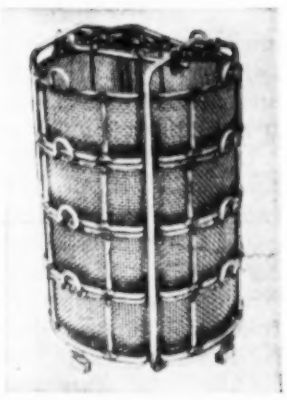
TUBE PLUG
seals off leaky condenser tube

A brass bushing with collar and a steel plug made with slight taper to fit inside taper of bushing comprise this tube plug for sealing off leaky condenser tubes. Sketch shows that outside of bushing is parallel to tube and tube sheet. Expansion of bushing or sleeve as plug is driven into it makes a tight fit. No damage can be done to tube sheet. Device accomplishes parallel expansion and gives complete contact of sleeve with the tube. Made by **Elliott Co.**, Lagonda Div., Martin St., Jeannette, Pa.



▲ For more details circle **NED-341 A5** on enclosed inquiry slip ▲

ANNEALING BASKET SLING
stainless unit holds four baskets



Metal parts for annealing in a Lindberg Cyclone furnace operating at temperatures up to 1380° F can be carried in this stainless steel basket and sling combination. Four baskets are nested in the sling and a self-locking bar holds them in place. Baskets are 22 in. OD by 6½ in. deep and are built of wire mesh reinforced with ½-in. rod. Each has lifting hooks and bottom braces. Sling is made of ¾-in. rod and has lifting hooks and standing lugs. Made by **Wiretex Mfg. Co.**, 41 Mason St., Bridgeport, Conn.

▲ For more details circle **NED-342 A5** on enclosed inquiry slip ▲

where HEAT eats metal
paint with THERMALITE
and protect up to 1000°

NEW SILICONE HIGH-HEAT ALUMINUM PAINT FUSES TO METAL . . . PROTECTS AGAINST RUST AND CORROSION

A revolutionary paint development, Thermalite fuses to metal, will not discolor, blister, burn or flake off—even at 1000° heat! Protects against rust, corrosion, chemical fumes. Formulated to stand severe weather exposure as well as high heat.

Ordinary aluminum paints flake off under high heat because the resins burn out. Thermalite's film-forming solids consist of "silicones"—the wonder resin that defies heat, fuses to metal, producing a tough, silver-bright, tightly-adhering coating.

In hundreds of applications industrial users have proved that Thermalite solves their problem of obtaining a paint coating that withstands 400° to 1000° heat. Two types available, one for interior, the other for exterior metal surfaces.

FREE! . . . to industrial paint users. Your letterhead request brings complete information on Thermalite for interior or exterior use. Write today!

TROPICAL PAINT COMPANY
1124-1292 W. 70th • Cleveland 2, Ohio
HEAVY-DUTY MAINTENANCE PAINTS SINCE 1883

▲ For more details circle **NED-343 A5** on enclosed inquiry slip ▲

NEW

McGILL® SEALED GUIDEROL® full type roller bearing
PROVEN PERFORMANCE PLUS NEW PROTECTION

The new SG series GUIDEROL Bearing provides low-cost sealing for many applications for which ordinary needle type bearings and separate seals are often too cumbersome and expensive. Commercial lip-type seals are added to the standard full-type GUIDEROL roller bearing without increasing overall bearing size. Whether you want to seal lubricant in or keep dirt out, you will find the answer in one of the five combinations possible with single or double seals.

Send for McGILL Catalog No. 52.

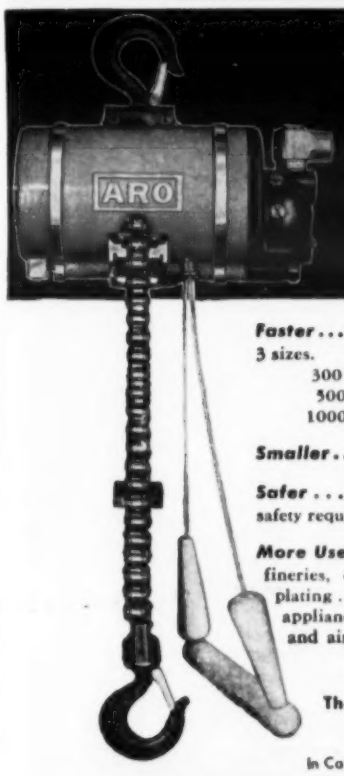
50th McGILL Anniversary

YOU CAN DEPEND ON McGILL® QUALITY

McGILL MANUFACTURING CO., INC. 101 N. Lafayette St. Valparaiso, Indiana

▲ For more details circle **NED-344 A5** on enclosed inquiry slip ▲

ARO Variable Speed AIR HOIST



Faster . . . Quieter . . . wide speed range, 3 sizes.
300 lb.—lift rate 75 ft. per min.
500 lb.—60 ft. per min.
1000 lb.—40 ft. per min.

Smaller . . . one man can easily install.

Safer . . . no spark hazard . . . betters all safety requirements.

More Useful . . . for shipping docks . . . refineries, chemical plants, heat treating, plating . . machine shops, foundries . . . appliance, furniture, textile, automobile and aircraft assembly . . . stock rooms.

See your ARO Distributor

The Aro Equipment Corporation
Bryan, Ohio
Offices in All Principal Cities
In Canada—Aro Equipment of Canada, Ltd. Toronto, Ont.

ARO AIR HOIST

Also . . . Air Tools . . . Lubricating Equipment . . . Aircraft Products . . . Grease Fittings

▲ For more details circle **NED-345 A5** on enclosed inquiry slip ▲

KELLER AIR MOTORS

- Compact design with high power-to-weight ratio. Enclosed construction.
- Efficient with either high or low air pressure.
- Positive-acting, piston-type, constant torque motors with infinitely variable speed in either direction.
- ½ To 2¾ hp in a wide range of speeds and torques.

Send for illustrated descriptive Bulletin No. 70

Keller Tool Company
1331 Fulton St.
GRAND HAVEN, MICHIGAN

▲ For more details circle **NED-346 A5** on enclosed inquiry slip ▲

PIVOTED-BLADE SHEAR
A Revolutionary Design!

UPPER KNIFE TRAVELS IN CIRCULAR PATH

Radically different from all other metal-cutting shears. Overcomes handicaps of ordinary guillotine-type shears. No slides or guides to wear. Many other important features. All sizes for metal to 1-1/4" thick or 18'-0" long.

STEELWELD Pivoted-Blade SHEARS CATALOG No 2011

Send for free Catalog No. 2011

THE CLEVELAND CRANE & ENGINEERING CO.
6607 East 282nd St., Wickliffe, O

STEELWELD SHEARS

▲ For more details circle NED-347 A5 on enclosed inquiry slip ▲

Now time your jobs
AUTOMATICALLY with CALCULAGRAPH!

Prints date..
starting time..
finishing time..
— and total elapsed time!

Save time and eliminate clerical errors with Calculagraph accurate-to-the-minute, printed job time records. Use these data cards for computing costs, estimating on reorders. One Calculagraph can record job time data for an entire shop or department.

NEW! AUTOMATIC DATER!

Standard on all electric models. Automatically changes date — eliminates incorrect dating of records.

ASK FOR COMPLETE INFORMATION, TODAY

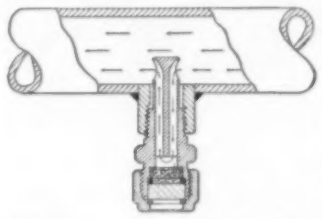
Illustrated literature and sample job cards will be sent promptly on request. Just call or write Dept. 302

CALCULAGRAPH COMPANY
Sussex St., Harrison, New Jersey
STANDARD OF ACCURACY SINCE 1892

▲ For more details circle NED-348 A5 on enclosed inquiry slip ▲

MOISTURE INDICATOR
for gas lines features color change

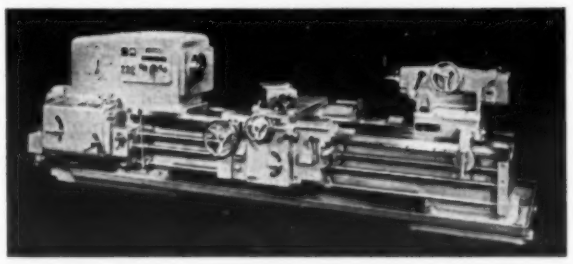
Tel-Tale gel between the metal perforated disk and Pyrex glass of the Little One Eye gas line moisture indicator reveals the presence of moisture. Blue color appears when gas is dry, turning pink when it is wet. Model 38 has a venturi tube which causes gas to flow past the indicating gel. It is furnished without the venturi for static applications. Model T 50 fits into the gas line in a T-section. All styles are offered in brass, aluminum and type 316 stainless steel for use in −100 to 300° F temperature range and full vacuum to 5000 psi pressure range. Insertion of other elements permits use as acidity, alkalinity, corrosive action, flow, color, purity and radiation indicators. Made by **Pilotrol Corp.**, P. O. Box 172, Springfield, N. J.



▲ For more details circle NED-349 A5 on enclosed inquiry slip ▲

HEAVY DUTY LATHE
60-hp machine tool designed to take advantage of carbide tooling

Three models of series 90 Dyna-Shift heavy duty lathes are designed specifically to permit carbide tooling to be used to the fullest advantage on work of

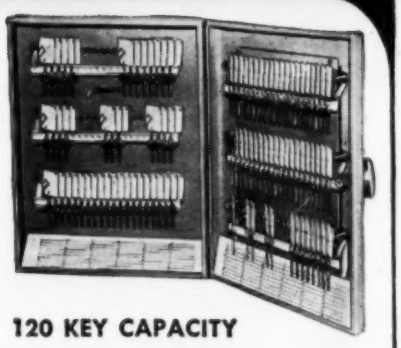


considerable size. Each model has a main drive motor capacity equivalent to 60 hp. Model 2500 swings 25 in. over the cross slide and has a clearance diameter of 40 in. Model 2501 swings 36½ in. over the cross slide and 44-in. clearance diameter. Model 2502 swings 36½ in. over the cross slide and has clearance diameter of 48-in. Metal removal rates above 100 cu in. per minute are achieved.

Dyna-Shift headstock is so designed that operator has only to set two dials, one for the cutting speed and other for the diameter to be turned. Headstock gears shift automatically to give the correct operating speed. All control levers are designed for convenience and safety. Thirty-six spindle speeds range from 6 to 750 rpm. Hole through spindle has 4 1/16-in. diameter. High pressure mist lubrication is used on headstock gears and bearings. Drive is through multiple V-belts. Totally enclosed, automatically lubricated end gear train and gear box provide range of 48 commonly used threads and feeds. Made by **Monarch Machine Tool Co.**, Oak St., Sidney, O.

▲ For more details circle NED-350 A5 on enclosed inquiry slip ▲

STOP HUNTING FOR KEYS



120 KEY CAPACITY

Here's real "key insurance" in a compact KE-CABINET. Made of 20 gauge cold rolled steel with suitable hardware to provide maximum key security. Equipped with numbered KE-TAGS of durable, vulcanized fibre. KE-CABINETS come in two sizes to hold 60 to 120 keys and 100 to 200 keys. The cabinet is finished in modern office grey.

For further information write
CUSHMAN & DENISON MFG. CO.
153 West 23rd St., New York 11, N. Y.

KE-CABINET

▲ For more details circle NED-351 A5 on enclosed inquiry slip ▲

MAKE FAST PERMANENT REPAIRS ON LEAKING FAUCETS, VALVES

REPLACE Worn Seats with Endurable Bronze in a few minutes, STOP WASTE...SAVE MONEY

Economy VALVE SEAT CO.
1432 N. Keating Ave. Chicago 51, Illinois

▲ For more details circle NED-352 A5 on enclosed inquiry slip ▲

Wolverine
Heavy Duty
QUICK ACTION TOGGLE CLAMPS

Extra CLEARANCE
Extra SPEED
and now
Extra SERVICE
assured by the use of
HARDENED PINS & BUSHINGS
at all bearing points, in the popular C-100, CQ-1100, and CQ-800 series Toggle Clamps.

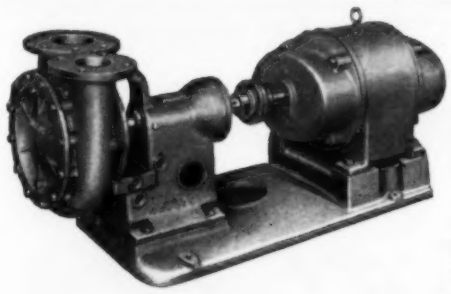
Rugged construction—drop forgings, cast steel and solid bar stock.

Wolverine Toggle Clamps also available in several types and sizes of Standard Action and Push Action units.

Write for Bulletin

WOLVERINE TOOL CO.
1482 E. WOODBRIDGE
DETROIT 7, MICHIGAN

▲ For more details circle NED-353 A5 on enclosed inquiry slip ▲



The entire fluid end of this chemical pump is available in any of the following metals: 316, Gould-A-Loy 20, 304, all iron, all bronze or bronze fitted, all iron with stainless trim. Nine sizes ranging from ¾" to 3"; capacities up to 720 GPM; heads to 200 ft.

You get a lot for your money
in this new chemical pump

New design features of the Goulds Fig. 3715 centrifugal pump offer you special operating and maintenance advantages in handling acids, alkaline liquors, and slurries.

Thousands of severe-service uses have proved the operating efficiency of the liquid end of the Fig. 3715 design, but the support head is completely new. It's a sturdy, box-type design with water cooling which raises the maximum liquid temperature limitation to 350° F. It has grease-lubricated standard bearings with grease relief that helps prevent over-lubrication . . . and a simple, positive external arrangement for adjusting impeller clearance without any dismantling.

Bulletin 725.4 describes *all* the operating and maintenance advantages of the Goulds Fig. 3715 chemical pump. It defines the extensive standardization this design accomplishes for simplifying your parts inventory. It gives you detailed performance curves. We will be glad to send you a copy.

Goulds PUMPS INC.
Seneca Falls New York

▲ For more details circle NED-354 A5 on enclosed inquiry slip ▲

VER-T-RACK

- EXPEDITES MATERIALS UP TO 60% FASTER
- SAVES MAN HOURS
- SAVES FLOOR SPACE
- ELIMINATES MATERIAL DAMAGE
- REDUCES WORKER FATIGUE
- GREATER SAFETY FACTOR
- MAXIMUM EFFICIENCY AT MINIMUM COST

HEIGHT — 63¾" LENGTH: 35"
WIDTH: 24" CAPACITY: 1 TON

Equipped with 6" roller bearing steel wheel casters

VER-T-RACK can be handled with lift truck.
Trays are adjustable on **VER-T-RACK**

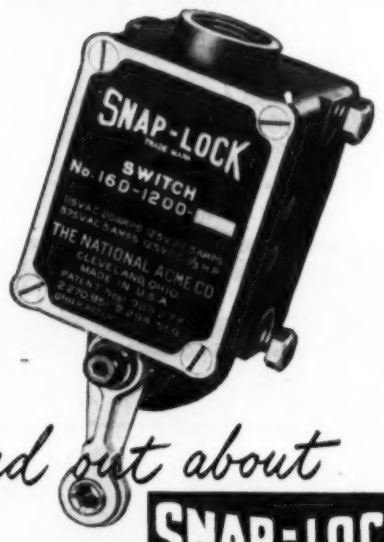
ONLY **$45** Plus $5.50 for each tray open as shown or semi-closed

THE VINCE BASNIK CO.
2020 Center St., Dept. N. Cleveland, O.

For more details circle NED-355 A5 on enclosed inquiry slip

in doubt about

limit switches?



find out about

SNAP-LOCK
TRADE MARK

National Acme SNAP-LOCK Limit Switches are designed and built to stand up under the heaviest service that rugged, precision operated machine tools (often demanding more than 400 contacts a minute) or other modern machine design can place upon them.

Records prove SNAP-LOCKS dependable for more than 15,000,000 contacts . . . perhaps the best reason why they have been adopted as standard switch equipment by 4 out of 5 builders of heavy duty machine tools.

If *you* are looking for limit switches you can install and forget, let us work with you in designing these trouble-free SNAP-LOCK switches into your equipment.

WRITE FOR BULLETIN EM-51. It shows various types of Snap-Lock switches available—including water-resistant and special purpose. Lists design features, specifications, wiring diagrams, ordering data. Also shows other National Acme electrical components and controls that may improve your product.

ELECTRICAL MANUFACTURING DIVISION
THE NATIONAL ACME COMPANY
182 East 131st Street, Cleveland 8, Ohio

For more details circle NED-356 A5 on enclosed inquiry slip

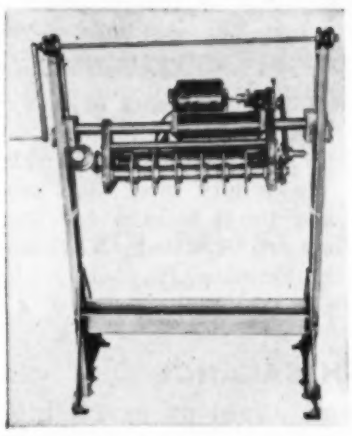
TWO-COMPONENT BLENDER
flow continuous, end product uniform

TWO COMPONENT BLENDER

Complete package, two - component model TC blender for "on stream" blending is simplified standardized unit for such applications as caustic dilution, asphalt blending, cutting of heavy fuel oil and blending of butane and gasoline. The model TC blender delivers continuous flow of desired blend directly to tank trucks, tank cars, ships or storage. Blend can be duplicated with accurate uniformity for any number of batches. Unit shuts down if proper proportions are not maintained. Type FR blender is capable of automatically varying output to process demand, while type CR has rate control and will maintain preset blend rate exactly independent of changes in composition. Made by **Proportioneers, Inc.**, 425 Harris Ave., Providence 1, R. I.

For more details circle NED-357 A5 on enclosed inquiry slip

PACKAGE PALLETIZING MACHINE
tops packages with adhesive to form them into solid stacked block



Packages moving along on a conveyor over which this palletizing machine is installed receive several parallel strips of adhesive as they go under machine's strip gluing rollers. Thus when packages are stacked on pallet they adhere to one another, forming a solid block that will not shift in transit. Machine can be adjusted for varying package heights and has variable speed control to synchronize speed of glue rollers with conveyor speed. Glue film thickness is also adjustable.

Machine can be supplied to apply glue strips to underside of package. This requires splitting conveyor to install unit in the line. Unit is designed for easy cleaning at end of day's operation and glue reservoir is removable. It can be equipped with gravity feed for maintaining constant level of adhesive. Made by **Potdevin Machine Co.**, 273 North St., Teterboro, N. J.

For more details circle NED-358 A5 on enclosed inquiry slip

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You will find our experience in WHEEL IMPROVEMENT a treasure store for you in your search for MOBILITY at its BEST. We offer you—

- DESIGN of WHEELS and HUBS
- DESIGN of SPINDLES and AXLES
- SELECTION of Adequate BEARINGS
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- SELECTION of Sizes, Types, Rubber TIRES

—in ONE Engineered Package

Our PACKAGE PLAN can save you Research, Development, Tooling Costs. We Invite Your Inquiries.

INTEGRATED ENGINEERING — WHEEL BUILDERS for AGRICULTURE & INDUSTRY — Since 1888

FRENCH & HECHT
DIVISION
KELSEY-HAYES WHEEL COMPANY
DAVENPORT, IOWA

For more details circle NED-359 A5 on enclosed inquiry slip

New!.. Simplified!.. Smaller!

ELECTRONIC NON-SYNCHRONOUS WELDER CONTROL

- for WALL or MACHINE MOUNTING

Write for **BULLETIN 8992**
Address Square D Company
4041 North Richards Street
Milwaukee 12, Wisconsin

SQUARE D COMPANY

For more details circle NED-360 A5 on enclosed inquiry slip

A WETPROOF DIAL INDICATOR

Completely Sealed—Wholly Protected from Coolant, Oil, Oil Fog, and Other Liquid Contaminants

This WETPROOF DIAL INDICATOR eliminates maintenance troubles due to adverse operating conditions. It is completely wetproofed and built unusually rugged to withstand heavy handling. The crystal is of GLARE-PROOF GLASS and will not discolor when exposed to oil or other staining liquids. Wetproof Indicators are regularly furnished with revolution counter and Cushion Movement. They are available in "C" size (2¼" O. D.) and made to AGD specifications (except for minor variations). Write FEDERAL PRODUCTS CORP., 5171 EDDY STREET, PROVIDENCE 1, RHODE ISLAND.

Ask **FEDERAL**
FOR ANYTHING IN MODERN GAGES...

Dial Indicating, Air, Electric, or Electronic — for Inspecting, Measuring, Sorting or Automatically Controlling Dimensions on Machines

For more details circle NED-361 A5 on enclosed inquiry slip

Commander

SELECT A SPINDLE

DUAL SPEED DRILL PRESS TURRET

DRILLS, REAMS, TAPS ON 1 DRILL PRESS SPINDLE!

- Fits Any Drill Press
- Increases Production
- Reduces machine, fixture costs

Commander Select-A-Spindle permits you to do 3 operations on a single drill press spindle . . . save time . . . eliminate multiple handling of piece parts, speed production and reduce overall costs. Dual Speed Select-A-Spindle permits selection of proper speed for each operation. Quick, positive hand indexing positions each tool accurately for sequence operations. Select-A-Spindle is built to tap with any 1, 2 or all 3 spindles to the full capacity of the unit. Adjustable torque control spindles for protection of taps to ¼" available.

Write for illustrated circular on Select-A-Spindle, other Commander Production Tools and name of your nearby Commander Distributor

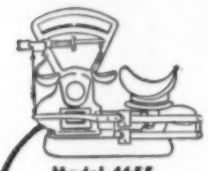
Commander MFG. CO.
4220 W. KINZIE STREET, CHICAGO
PRODUCT OF COMMANDER . . . BUILDER OF PRODUCTION TOOLS

For more details circle NED-362 A5 on enclosed inquiry slip

COUNT BY WEIGHT

Control Costs with New TOLEDOS

These new Counting Scales eliminate slow, tedious hand counting of parts . . . count hundreds of parts *accurately* in a few seconds! Complete line—for issuing predetermined quantities . . . counting unknown quantities . . . for faster inventory counts . . . or to get accurate receiving, shipping, and piece-work counts. Choice of double and triple ratio combinations. Send for booklet. Toledo Scale Company, Toledo 1, Ohio.



Model 4655

Portable Type

TOLEDO®

HEADQUARTERS FOR SCALES

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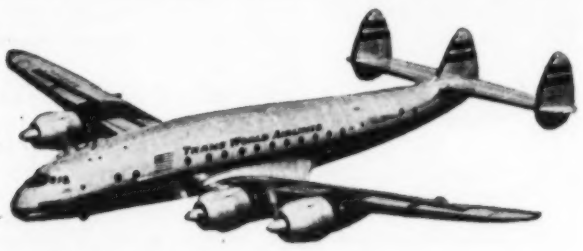
HOW XEROGRAPHY

(ze-rog-ra-fee)

cuts duplicating costs $30,000 a year for TWA

Trans World Airlines · U.S.A. · Europe · Africa · Asia



SPEEDS:

1. FINANCIAL REPORTS AND CHARTS TO MANAGEMENT
2. SERVICE AND MAINTENANCE MANUAL REVISIONS
3. PRODUCTION OF FORMS AND ILLUSTRATIVE TRAINING MATERIAL

From its earliest beginnings, Trans World Airlines has been in the forefront of aviation development, constantly seeking methods and devices to improve equipment and passenger comfort.

Convinced that xerography offered a new and better way to get paperwork done cheaper, faster and with photographic accuracy, TWA installed XeroX® copying equipment to prepare offset paper masters for duplicating. Result: TWA's annual paperwork expenses trimmed by $30,000!

Monthly revisions in TWA's service manuals and parts catalog are speedily done by "stripping in" up-to-date data onto the originals which are then copied onto paper masters by xerography. Detailed financial reports to management, that cost about $70 using previous methods, now cost just $4, using xerography. Wall size charts are easily included in 8½" x 11" maintenance manuals—they are reduced in copying by xerography.

Anything written, typed, drawn or printed can be reproduced with photographic accuracy in about 3 minutes by xerography onto an offset paper master. These masters are used to run off multiple copies on an offset duplicator. Copies can be made from one or both sides of original material, by xerography, in enlarged, reduced or same size.

For use in diazo type machines, translucent intermediates can be made from an original in the same speedy way.

It is now possible with xerography to make up to 8 copies from 1 xerographic image, including an offset paper master or translucent intermediate.

***Write** for proof of performance folders showing how companies of all kinds, large and small, are cutting costs and speeding paperwork with xerography.*

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BRANCH OFFICES IN PRINCIPAL U.S. CITIES AND TORONTO

XEROGRAPHY

THE FASTEST, CHEAPEST, MOST VERSATILE WAY TO MAKE MASTERS FOR DUPLICATING.

XEROX

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ADHESIVE PAPER APPLICATOR adjustable for widths up to 48 in.

Polished surfaces of stainless steel, sheet plastic, aluminum and glass can be protected against damage by pressure-sensitive paper, applied rapidly and evenly by the Walco power applicator. Firm rubber roller pressure joins the paper to sheet material at a speed of 30 fpm. Machine is adjustable for widths up to 48 in. and thicknesses up to 1½ in. An adjustable conveyor platform takes the sheet fed from the rack, applies the pressure-sensitive paper, then delivers it to the waiting container rack. A ¼-hp electric motor powers the machine through a chain drive. Made by **L. R. Wallace & Co.**, Dept. C1-M, 191 N. Pasadena Ave., Pasadena 3, Calif.

▲ For more details circle **NED-365 A5** on enclosed inquiry slip ▲

GROUNDED EXTENSION CORD in 10, 25, 50 and 100-ft lengths

Completely shockproof grounded three - wire U-blade extension cord set is designed to meet new grounding requirements effective in January, 1955. Cord will accommodate three-wire caps which will be components of many portable tools and appliances. Construction includes armored cap and connector with metal cord clamps and No. 16-3 type S. J. heavy duty wire. Sets are available in 10, 25, 50 and 100-ft lengths and are rated 15 amp, 125 v. They are UL-listed. Made by **Rodale Mfg. Co.**, Minor St., Emmaus, Pa.

▲ For more details circle **NED-366 A5** on enclosed inquiry slip ▲

HEAVY DUTY SASH BALANCE requires no head room or mortising

Capacity of the Helix heavy duty spiral sash balance is up to 70 lb per sash. It requires no head

or side room or mortising, only a 13/16-in. round or square groove. Tension can be adjusted after balance is installed. Balance is pretensioned at the factory and will automatically adjust itself to variations up to 5 lb. It is enclosed in an aluminum tube. Made by **Caldwell Mfg. Co.**, Dept. 115, 64 Commercial St., Rochester 14, N. Y.

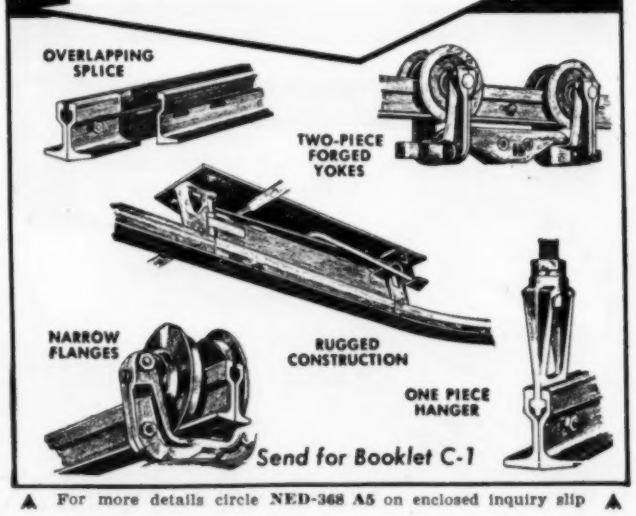
▲ For more details circle **NED-367 A5** on enclosed inquiry slip ▲

MONORAIL SYSTEMS FABRICATED TO FIT

American MonoRail is fabricated to fit any handling job. Systems are available for hand or electric operation, including rubber wheel drive with local or remote control providing many automatic features.

AMERICAN MONORAIL CO.

13116 Athens Ave. • Cleveland 7, Ohio



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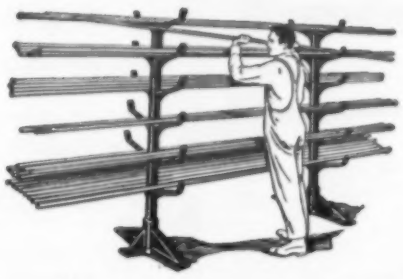
for EFFICIENT HANDLING and ORDERLY STORAGE



You save time, both in storing and in issuing, when you use Brown Sectional Racks. Open sides speed handling. Complete visibility permits quick selection to save mechanics' waiting time.

Maximum flexibility in arrangement is possible because each Brown Rack is independent and self-contained, need not be bolted to floor. Easily relocated. Systemized storage with Brown Racks promotes good housekeeping, cleanliness.

All iron and steel construction, can't burn, bend, sag or warp. Never wear out.

Get these values now! Write for complete specifications and prices on wide range of models and sizes. Brown Engineering Co. 129 N. Third St., Reading, Pa.

BROWN QUICK-SERVE RACKS

▲ For more details circle **NED-369 A5** on enclosed inquiry slip ▲

View of Model 1405 with table removed

AIR-HYDRAULICS Heavy Duty Air Index Tables allow no backlash, skips or overruns because: both the cushioned stop and air speed are adjustable to compensate for variations in load weights and diameters • The index pin shifts to the next notch while table is stationary and is **only** disengaged by the locking dog **after** indexing • The locking cylinder insures firm seating of dog in ring notch • Air cushioned stop eliminates wracking jar

5 versatile sizes from 10" to 48" in diameter (Model 1405—15" dia. shown) • 4, 6, 8 or 12 station rings are standard, others up to 30 stations made to order • May be mounted vertically or horizontally on all types of presses or other tools requiring indexing • Operate on standard line pressures from 60-175 lbs.

Write today for new 14-page catalog covering presses, hammers, index tables and allied equipment.

AIR-HYDRAULICS INCORPORATED

231 BELDEN ST. • JACKSON, MICHIGAN

▲ For more details circle **NED-370 A5** on enclosed inquiry slip ▲

"Shows how costs are cut in 40 precision finishing operations through use of Liquamatte Wet Blasting. Write for a free copy of Bulletin 451-D.

American WHEELABRATOR *trail blazer of industrial progress*

AMERICAN WHEELABRATOR & EQUIPMENT CORP.

508 S. Byrkit Street Mishawaka, Indiana

▲ For more details circle **NED-371 A5** on enclosed inquiry slip ▲

CAN YOU THINK OF A BETTER WAY TO HANDLE MATERIALS?

CONVOY'S CHEMBOARD* SELF-STACKING TOTE BOXES *MAY BE YOUR ANSWER*

Convoy Boxes are LOW COST, STRONG and LIGHT WEIGHT . . . are made in a wide range of stock sizes and shapes. They weigh and cost less than 40% of steel.

*Chem-Board is Convoy's chemically impregnated corrugated board . . . flint-hard, rock-strong.

Here's an example of Convoy Self-Stacking Boxes speeding production, conserving space, saving money.

GET IN TOUCH WITH

CONVOY, INC.

CANTON 6, OHIO

P. O. Station B, Box 216-N

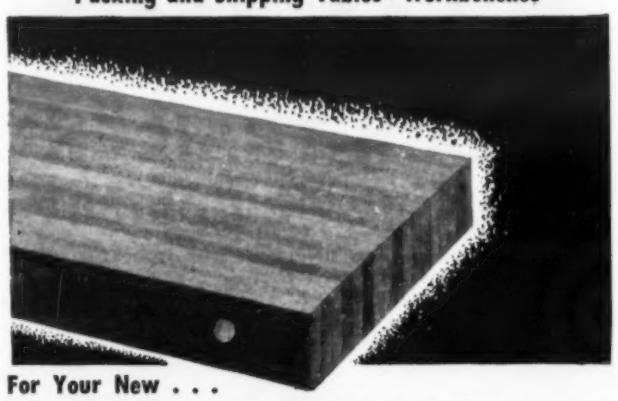
STANDARD AND CUSTOM-MADE NESTING, STACKING, and VERTICAL-SIDED CHEM-BOARD TOTE BOXES

▲ For more details circle NED-372 A5 on enclosed inquiry slip ▲

INDUSTRIAL WORKBENCH TOP

The "INDUSTRY PROVEN" Top for—

Industrial Benches • Cutting Tables • Assembly Benches • Packing and Shipping Tables • Workbenches



For Your New . . .

INSTALLATIONS or REPLACEMENTS check the advantages of a TOLCO TOP!

Electronically Glued — Northern, Hard Maple—¾" Laminations for Better Glue Bond—Greater Resistance To Warpage—Moisture Resistant—Will Not Damage Tools—Will Not Mar Assembly Parts—No Soft Wood Core—Will Not Chip—Easily Refinished—Reinforced With Steel Tie Rods

Since 1894 The Tolerton research and development program has been devoted to producing PRECISION BUILT wood products for industry. Electronic gluing for the woodworking industry originated in the Tolerton mills.

Send for your free copy of our new brochure explaining the advantages of TOLCO TOPS.

Sold by leading Industrial Distributors everywhere.

THE TOLERTON COMPANY

P. O. BOX B 658 ALLIANCE, OHIO

▲ For more details circle NED-373 A5 on enclosed inquiry slip ▲

Need Fabricated Tubular Parts

FASTER? CHEAPER?

Try Bishop Fabricated Stainless Steel Tubular Parts

Buying fabricated parts direct from the redraw mill saves time and money because "under one roof" fabrication eliminates extra handling costs, reduces transportation charges and speeds deliveries.

J. Bishop & Co. is the only redraw mill that specializes in fabricating tubing. Their 112 years experience fabricating precious metals, and over 20 years drawing and fabricating stainless steel tubing, assure you precision fabrication and quality craftsmanship.

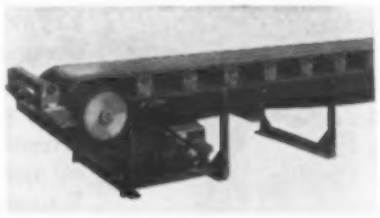
Whether you require stainless steel tubing or fabricated tubular parts, specify Bishop for quality, economy and speed. Catalog on request.

J. BISHOP & CO. • PLATINUM WORKS

STAINLESS STEEL PRODUCTS DIVISION, MALVERN, PA.

▲ For more details circle NED-374 A5 on enclosed inquiry slip ▲

SECTIONAL BELT CONVEYOR in 18 or 24-in. belt widths



Heavy duty sectional conveyor designed for fixed horizontal conveying of bags, boxes and cartons is available in 18 or 24-in. belt widths and with standard 20-ft interlocking sections. Drive units are equipped with tail shaft mounted sprocket for powering driven units. Ends of carrying rollers are spun to form smooth radius. Rollers turn in precision ball bearings protected by noncorrosive labyrinth seals. Standard roller spacing is 16 in., but decking is punched for variable spacing to meet requirements. Made by **Stephens-Adamson Mfg. Co.,** 12 Ridgeway Ave., Aurora, Ill.

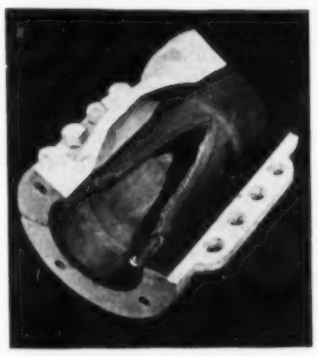
▲ For more details circle NED-375 A5 on enclosed inquiry slip ▲

ELECTRONIC LOCKING SYSTEM for doors, openings or passageways

Laboratories, storage rooms, vaults, tool rooms or any place where maximum security is required can be protected from unauthorized entry by the Lectro-Locking system. Lock is easily installed on any door, opening or passageway. It operates automatically and electrically and is opened only by combination which can be changed to any one of 100,000 other possible combinations in less than 20 seconds. Lock gives automatic warning whenever anyone tampers with control, cuts wiring or mis-dials the combination. It can be wired for optional signal to central alarm system and to record time of entry. Made by **Missouri Research Laboratories,** 2109A Locust St., St. Louis, Mo.

▲ For more details circle NED-376 A5 on enclosed inquiry slip ▲

CONTROL VALVE for solids in suspension



Body of the Red Jacket control valve for solids is cast iron and its sleeve is pure gum rubber, butyl or neoprene. Pressure between valve body and sleeve closes passage. Valve can be operated pneumatically or hydraulically for control or on-off service, but does not require a large mechanical external operator to close it. Impulse from an instrument or solenoid can actuate valve. Solids in suspension, acid slurries or other bulky materials can be handled. Sizes offered are 1 to 24-in. Made by **Red Jacket Co.,** 235 Fourth Ave., Pittsburgh 22, Pa.

▲ For more details circle NED-377 A5 on enclosed inquiry slip ▲

FASTER, MORE ACCURATE INSPECTION WITH

FLASH-O-LENS Illuminated Magnifiers

In industrial inspection departments, on production lines, in foundries and laboratories, wherever close visual inspection is important, FLASH-O-LENS gets the job done better, faster. FLASH-O-LENS spots minute defects by spotlighting the area it magnifies.

Battery models, powered by standard flashlight cells, and AC-DC plug-in models are available with 5, 7, 20 or 40 power precision lenses to meet a wide range of inspection needs. Prices start from $10.95

PIKE REG. U. S. PAT. OFF.

WRITE TODAY for literature showing applications, types, prices.

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NEW DESIGN IDEAS

for using neoprene, Du Pont's chemical rubber, are suggested by reports on how new products are developed . . . old ones improved . . . in every issue of the free

"NEOPRENE NOTEBOOK"

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NEOPRENE

The rubber made by Du Pont since 1932

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Can't Distort, Can't Misalign, because it has CANTILEVER DESIGN!

U.S. NEW TYPE GW SYNCROGEAR MOTOR

RIGHT-ANGLE WORM-GEAR

SOLID CAST UNIBASE

PYRAMIDAL SUPPORT

CLOSE-HITCH

SEALED PROTECTION

Mounting stresses absorbed. Gear and motor distortion-free.

Permanently accurate gear and bearing alignment are vital in right-angle, worm-gear. In the amazing new Type GW Syncrogear motor the *cantilever* principle is employed. Why? To prevent stress of motor and gear mounting. The single, solid-cast Unibase pyramidally supports the entire load, thereby avoiding mounting stresses and preventing distortion. All castings are normalized. This new design insures phenomenal motor life. Type GW is extremely compact. It permits close-hitch connection to any machine. Gear is sealed in dustproof case. Oil-dip lubrication. Asbestos-protected windings. Speeds, 20 to 155 r.p.m. Gear ratios up to 87:1. Horsepower, ¼ to 2.

U.S. MOTORS

U. S. ELECTRICAL MOTORS Inc.

Los Angeles 54, Calif. • Milford, Conn.

MAIL COUPON FOR TYPE GW SYNCROGEAR BOOKLET

U. S. Electrical Motors Inc.
P. O. Box 2058, Los Angeles 54, Calif. NED-1
or Milford, Conn.

NAME_____

COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE____

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DON'T THROW AWAY
WORN OUT
PLASTIC COATED GLOVES

GLOVCO's "Over-Kote" plan of cleaning, repairing and recoating makes them safe and good as new at fraction of original cost.

This is a new service that will save money for you. Plants are saving 90% of the plastic-coated gloves they once threw away. We guarantee satisfaction.

DON'T SCRAP LEATHER OR FABRIC GLOVES!

GLOVCO reclaims worn, dirty leather-faced gloves, welders' gloves, mitts, hand pads. Also hot mill, terry cloth, asbestos aprons and gloves, sleeves, drop cloths, etc. Service used in thousands of plants. Write for details of FREE trial demonstration.

U.S. INDUSTRIAL GLOVE CORP.
9352 Roselawn Ave., Detroit 4, Mich.

For more details circle NED-381 A5 on enclosed inquiry slip

LEWIS
"6"
PLASTICS INJECTION MOLDING MACHINE

Greater Capacity

Designed for high-speed production of intricate large projected area parts, MODEL "6" features a fully automatic molding cycle . . . plasticizes up to 60 pounds of polystyrene per hour . . . molds parts weighing more than 7 ounces at the rate of 2½ per minute.

Maximum Economy

Large platens . . . injection pressures up to 15,000 psi . . . and a powerful new clamping device permit MODEL "6" to do the work of considerably larger machines at a fraction of their initial and normal operating costs . . . and with minimum scrap.

Positive Safety

Electrical interlocks on the safety gate, over-center position of toggle mechanism when closed and the 200-ton locking pressure applied by the revolutionary new "Hydra-Lock" clamp assure maximum safety.

Featuring "HYDRA-LOCK"

An exclusive feature of LEWIS machines, "Hydra-Lock" is the key to the outstanding performance of MODEL "6". By combining the fast closing action of a toggle mechanism with a large-diameter short-stroke hydraulic cylinder, Lewis engineers have developed the safest, most powerful mold clamping device available today on any plastics molding machine.

WRITE FOR BULLETIN 102 FOR COMPLETE DETAILS.

LEWIS
THE LEWIS WELDING & ENGINEERING CORPORATION
14 Interstate Street, Bedford, Ohio

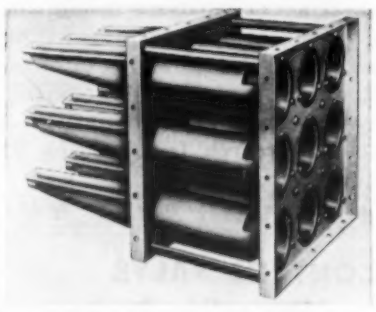
For more details circle NED-382 A5 on enclosed inquiry slip

VERTICAL BROACHING MACHINE has 2-ton hydraulic pulling power

Keyways or square, oblong, hexagon, irregular, splined or round holes can be precisely cut with stock Pioneer broaches by VM215 vertical pull broaching machine. It can also be used for surface broaching operations. It provides up to 2 tons hydraulic pulling power and 15-in. cutting stroke. Complete stroke and return to start is cycled in 13 seconds. Adjustable stop automatically limits stroke to actual requirements. Motorized hydraulic power unit is self-contained and base-mounted at rear. Work table surface measures 16¼ x 16¼ in. and is clear of obstructions to accommodate large work. Made by **Pioneer Broach Co.**, Dept. NED-1, 6434 E. Telegraph Rd., Los Angeles 22, Calif.

For more details circle NED-383 A5 on enclosed inquiry slip

GRANULAR DUST COLLECTOR handles widely fluctuating air volumes and dust concentrations



Power plants burning pulverized coal, or dry chemical plants using large volumes of exhaust air are typical users of AMERclone "reverse tangent" type granular dust collector. Heart of unit is conical inlet which imparts swirling motion to dust particles, while allowing clean air to travel through type G tube without changing direction. Each tube has approach velocity of 1000 fpm and cleaning capacity of 333 fpm.

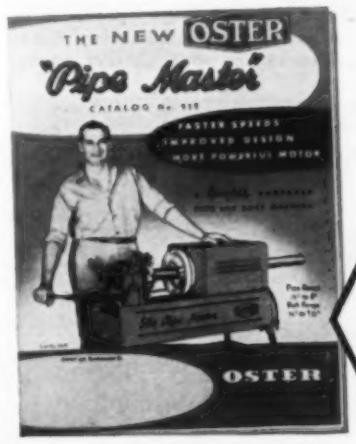
Nine tubes are combined in standard modular cell which has nominal rating of 3000 cfm with face area of 20 x 20 in. Any number of cells can be combined to achieve required capacity. Because of straight-through air flow design, collectors can handle widely fluctuating air volumes and dust concentrations with constant efficiency. They are particularly effective in eliminating fly ash during boiler blow-off.

Basic unit includes secondary exhauster circuit for disposing of 10 per cent of primary air and collected dust, bled off by tubes. Standard unit is limited to temperatures of 750° F. Pressure drop is 4½ in. at standard air (70° F, 29.92 in. of mercury). Made by **American Air Filter Co.**, 391 Central Ave., Louisville 8, Ky.

For more details circle NED-384 A5 on enclosed inquiry slip

New Power.. New Features

ALL NEW OSTER



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For more details circle NED-386 A5 on enclosed inquiry slip

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THERE'S A SOLID PINTLE OR SWIVEL PINTLE TYPE IN A VARIETY OF SIZES FOR EVERY COUPLING NEED

Premier hitches are engineered for one-hand operation—*no struggling to engage or disengage the drawbar* — and ruggedly built for long life and safety — the double locking mechanism insures maximum safety. *Premier hitches meet I.C.C. standards.*

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Illus.: No. 290—Swivel Pintle type.
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Speeds Up Lifting and Handling
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Used throughout industry on the Production Line and in Warehousing.

Pays for itself in many ways.

Order this Low Cost Production Aid . . . TODAY!

Delivered from stock with 5 inch Neoprene Cup, Aluminum Handle, 96 inch Hose and Pressure Regulator—ready to connect to air line.

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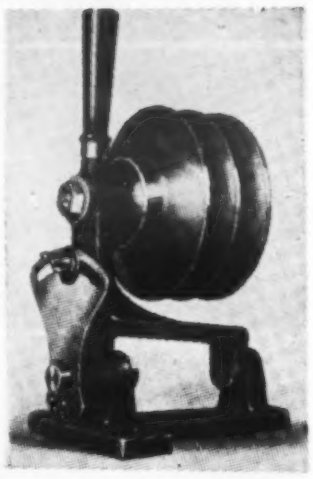
District Offices: Detroit and Cleveland
Also AIR BLAST VALVES • PRES-VAC SAFETY FEEDERS

For more details circle NED-385 A5 on enclosed inquiry slip

VARIABLE SPEED CONTROL



Variable speed control of V-belt and equipment up to a maximum 3 to 1 ratio is provided by this single lever controlled unit. Mechanically simple in design and sturdily constructed to withstand hardest service, models 1A and 2A Toledo variable speed controls have numerous unique features including: plain, smooth pulley, eliminating noise and vibration; stepless speed variation up to full 3 to 1 ratio; minimum pulley diameters are increased to transmit greater H.P. over entire range; new pulley design providing cylindrical bottom for V-belts which fixes minimum pitch diameter, preventing damage to belts and giving increased torque; single arm support, for easy belt application; large shaft, oilite bearings and lubricant reservoir; sector plate serving as dial indicator and additional locking medium; unusually attractive prices.

Wheel assemblies can also be purchased without mountings for application on machines providing built-in speed control.

If you have a variable speed control problem, either on plant equipment or on machinery you build for sale, investigate the Toledo variable speed control . . . you'll be interested in its efficiency and low price. Ratios as high as 10 to 1 are available. **The Toledo Timer Co.,** 2224 Albion St., Toledo, O. Adv.

▲ For more details circle **NED-388 A5** on enclosed inquiry slip ▲

MACHINE SAFETY DEVICE
entry into protected area halts operation of dangerous machinery

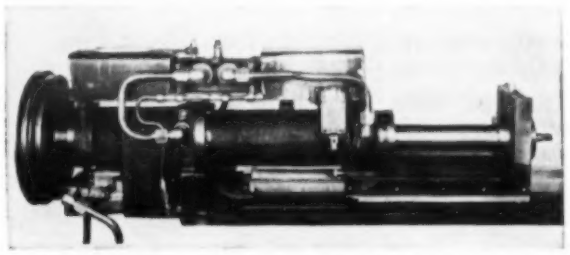
Loss of fingers, limbs or life on all types of automatic machine tools, power presses and belt line assembly systems having dangerous mechanisms can be eliminated by installation of this "fail-safe" safety device. This model TGS 150 Silent Sentry will stop or change a machine or operation immediately if a person moves into the "protected area." If the device or current supplying it should fail, machinery automatically stops.

An antenna forms a sensitivity pattern about the machinery which may be set to safeguard a small or large area. Sensitivity can be adjusted so that a body approaching to within 12 in. will actuate the device. Operation is from a 117-v, 50-60-cycle source and output has both normally open and normally closed contacts so that an external circuit can be used to stop or start machinery and operate other devices. Contacts handle noninductive load of 5 amp. Made by **R. G. Genzlinger, Inc.,** Neshaminy, Pa.

▲ For more details circle **NED-391 A5** on enclosed inquiry slip ▲

HYDRAULIC MACHINING UNIT
in ram stroke of 6, 9 or 12 in. with feed rate of 0 to 8 ipm

Ram of model E 1½-hp hydraulic unit is coaxial with spindle, exerting its full force directly behind the head. Splined spindle shaft extends through center



of cylinder, piston and ram and projects through face of ram head. This eliminates lateral forces on head which would tend to force head out of line under pressure. Support at spindle end or ram rides on ways throughout length of stroke, eliminating wobble.

Quick change-over from job to job is facilitated by design of spindle support. A 2-in. rabbet in face of this support locates multiple head to be attached to it. Unit is obtainable with ram stroke of 6, 9 or 12 in. Feed rate is 0 to 8 ipm, with traverse speed of 240 ipm. Pump speed can be set for any traverse speed, while spindle speed can be set for 600 to 3600 rpm. A two-solenoid valve operates ram in both directions. Made by **Rock River Engineering Co.,** Room 400, Empire Bldg., Rockford, Ill.

▲ For more details circle **NED-392 A5** on enclosed inquiry slip ▲

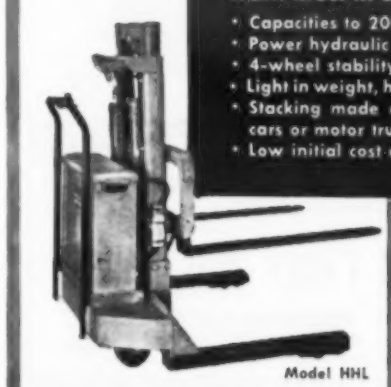
the multi-purpose lifting machine for the small shop

STUEBING DESIGNED • STUEBING ENGINEERED • STUEBING BUILT

Hydrolift Straddle Stacker

here are the FEATURES . . . you want most in a mobile stacker

- Capacities to 2000 lbs.
- Power hydraulic telescopic lift.
- 4-wheel stability.
- Light in weight, highly maneuverable.
- Stacking made easy inside railroad cars or motor trucks.
- Low initial cost and upkeep.



Model HHL

The Hydrolift fulfills the demand for an all-purpose hand truck in the average plant. It can be used for handling pallets, skids, dies, drums, barrels, sacked goods, and for numerous other non-routine jobs.

LIFT TRUCKS INC. 2423-2431 Spring Grove Ave. CINCINNATI 14, OHIO

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Hardness Readings in 2 seconds!

Webster PORTABLE Hardness Testers FOR NON-FERROUS METALS

TWO LOW-COST MODELS differing in sensitivity for rapidly testing hardness of aluminum, brass, copper, etc. No training required; one hand operation. Hardness readings in 2 seconds anywhere in shop. Can be correlated to standard hardness scales. Quick reading dial. Special anvil design tests all shapes: sheets, extrusions, tubing, strip stock. Capacity ¼". Simple, rugged design, easy maintenance.

MODEL B Direct hardness readings on all aluminum alloys.

MODEL B-75 Direct hardness readings on copper, brass, etc.

Other models available

WEBSTER INSTRUMENT INC. DEPT. N, 11856 Mississippi Ave. Los Angeles 25, California.

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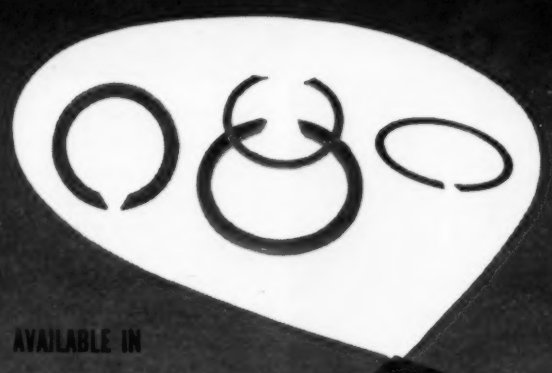
RELIANCE SNAP RINGS

SLASH PRODUCTION COSTS and SAVE MATERIAL



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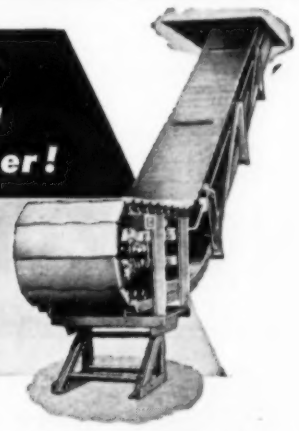
This Conveyor will serve you better — longer!



Weld-Bilt STEEL-BELT CONVEYORS

If you will compare the advantages of this "moving belt of interlocking steel", you can readily see why the WELD-BILT is today's most important new aid to materials moving . . . Far superior to other types of conveyor equipment.

HERE'S WHY —

POSITIVE TRACKING — always runs in a straight line — no weaving, buckling, stretching, creeping.

SLIP PROOF DRIVE — Weld-Bilt steel sprocket positive-engagement drive avoids any chance of slippage — for positive, accurately timed movement at any selected speed.

UNLIMITED BELT LIFE — Weld-Bilt conveyor surfaces are solid sheets of heavy steel or stainless steel to carry heaviest, roughest loads through years of service with minimum replacement expense.

FRICTION — NIL! — Individual links ride on ball bearing rollers in grease sealed raceways — for easier, smoother operation — at low power cost.

WRITE FOR BULLETIN AND FURTHER DETAILS. WEST BEND EQUIPMENT CORP. Materials Handling Engineers

311 Water Street, West Bend, Wisconsin.

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The NEW TORNADO®

More Versatile Cleaning From Floor to Ceiling

This new Tornado cleaner brings you even greater cleaning power and longer life . . . with air speeds up to 325 M.P.H. 3 sizes: ¾ H.P., 1 H.P. or 1½ H.P.

Tornado picks up all dirt, dust, chips, oil or other liquids without any conversion.

The powerful motor unit removes from the cover with a simple ¼ turn. The same motor unit can then be used for:

1. A pack-carried vacuum cleaner
2. A powerful portable electric blower
3. A jumbo cleaner for use with a standard 55 gal. drum

No matter what your cleaning job—Tornado will do it better and faster—run for hours & hours of constant duty under the worst conditions.

Write for Bulletin 660

We'll be glad to demonstrate in your company—just tell us where and when.

1/4 turn removes motor unit. All sizes interchangeable.

Motor unit & adaptor cover fit any standard drum for doing the big cleaning jobs.

BREUER ELECTRIC MFG. CO.

5116 North Ravenswood Avenue • Chicago 40, Illinois

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with

S.S.W Plastic Plugs and Caps

Safeguard your products before shipment with these low-cost plastic closures. They're easy to use and provide the safe and sure protection that pays off in increased customer satisfaction and in reduced repair and servicing work. As the original and leading manufacturer of protective plastic shipping caps and plugs, S.S.White is in a position to offer a full selection of standard sizes for any requirements.

C-3

Write for literature and samples. Address Dept. 7P

THE S.S.White DENTAL MFG. CO. PLASTICS DIVISION

10 East 40th Street New York 16, N.Y.

Western District Office • Times Building, Long Beach, California

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TUMBLING IS FOR ACROBATS ONLY!

PREVENT ACCIDENTS with the SAFETY FLOOR

GRIP-TREAD MASTIPAVE by PABCO

Accidents are no joke... to the worker who's the victim, or to you, the plant owner. Save work-losses, enjoy lower accident insurance rates with GRIP-TREAD Mastipave by Pabco. It's the super-tough, *super-safe* floor covering with built-in brakes! Grip-Tread is resilient ...easy on the budget...lasts for years. In rolls, 36" wide, terra cotta color.

Only PABCO makes GRIP-TREAD MASTIPAVE

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GENTLEMEN: Without cost or obligation to me, please send your folder, "Every Building Needs Pabco MASTIPAVE."

NAME_____

ADDRESS_____

CITY_____ STATE_____

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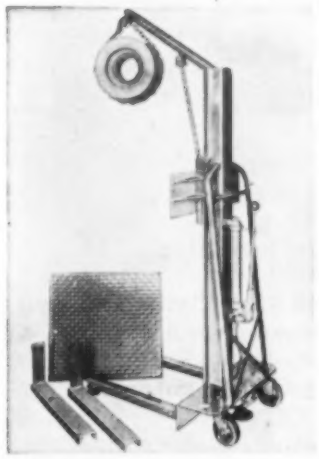
HYDRAULIC LIFT
boom attaching mechanism improved



An improved mechanism for attaching and detaching shop boom, plus enclosing of fork and platform lifting mechanism for safety are improvements made in this 3-in-1 hydraulic lift. Unit affords boom, fork and platform methods of lifting and moving heavy or bulky loads. The 500-lb capacity boom can now be mounted or removed in less than 1 minute by means of finger touch lock. Boom eye moves from 47½ to 87 in. above floor. Hydraulic power is provided by fast-acting hand pump and cylinder. Fork and platform each have capacity of 750 lb and lift up to 55 in. above floor. Lift is mounted on four roller bearing wheels and will operate in 26-in. aisles. Foot brake is standard. Made by **Unit Mfg. Co.**, Dept. 124, 1251 Harmon Pl., Minneapolis 3, Minn.

▲ For more details circle NED-398 A5 on enclosed inquiry slip ▲

CONSTANT LEVEL OILERS
feed very light to 600 W oils

Constant level of oil in large ring or ball bearing chambers, pump and gear housings and textile comb boxes is automatically maintained by line of oilers. Other uses include moistening of humidifiers, felt pads and gummed tape machines with water or other applications where a constant level reservoir is desirable. Oilers will feed oil from very light to 600W. Large surge capacity is provided. Reservoirs with 10 oz, 1 pint, 1 and 2½ quart capacities are available in Lucite plastic or Pyrex glass. Metal parts are machined brass and base is cast aluminum. Made by **Trico Fuse Mfg. Co.**, 2948 N. Fifth St., Milwaukee 12, Wis.

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Metal-Cutting Tools

Viking Tool Co.—Plastic bound and containing 44 pages, illustrated, improved catalog on line of metal-cutting tools includes sectional diagrams, specifications and general data. Covered are various types of high speed steel milling cutters, replacement parts, carbide milling cutters, inserted carbide single point tools, tools with mechanical chip breakers and many others.

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SPRAY NOZZLES

exact performance for every need

Choice of thousands of standard spray nozzles gives you exact spray pattern, capacity, impact and atomization. PROMPT . . . often immediate delivery from stock.

BE SURE TO WRITE FOR . . . .

the most complete spray nozzle catalog ever printed . . forty-eight pages of detailed information. Write for your free copy of Catalog No. 24.

SPRAYING SYSTEMS CO.
3211 Randolph Street • Bellwood, Illinois

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PLASTIC **LABELON** *Write on it* **TAPE** SELF-STICKING

For samples and prices, see your nearest dealer or write Dept. NED-1

LABELON TAPE CO., INC., 450 Atlantic Ave., Rochester 9, N.Y.

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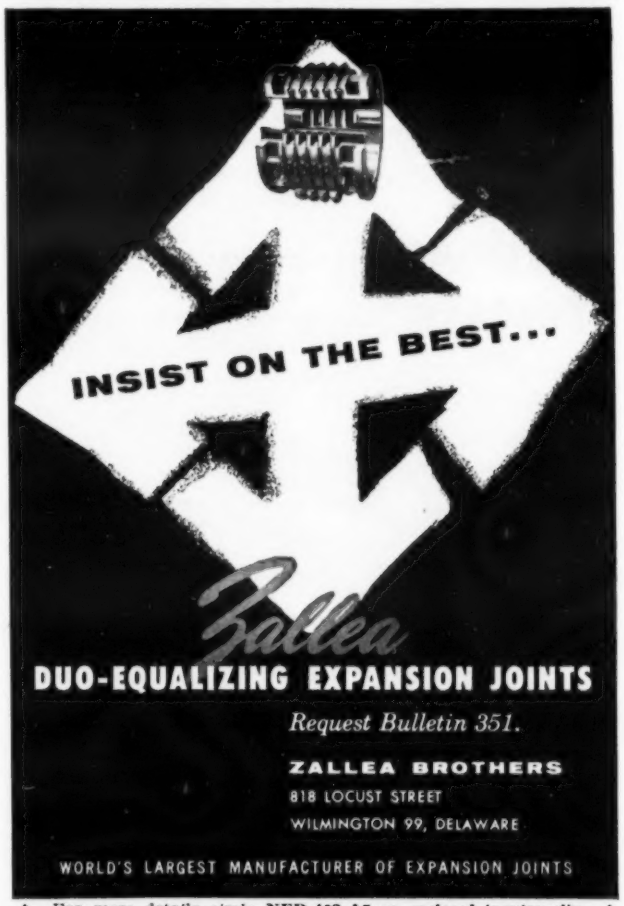

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DEKA BORE saves **80%** of boring time

DEKA-BORE (and only DEKA-BORE) can be adjusted in fractions of 1/10,000" on the full diameter as easily as reading 1/16" on a steel rule. NOT A VERNIER OR SCROLL ADJUSTMENT. Can be calibrated in increments of .00005 on radii or .0001 on diameter as easily as picking up .002 on a conventional micrometer dial.

100% GUARANTEED!

write for free demonstration or literature!

PRECISION TOOL & MFG. COMPANY OF ILL.
1305 SOUTH LARAMIE, CICERO 50, ILLINOIS NED-1

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This detailed line drawing of the new, patented Veelos TD and TE v-belt makes it easy to see how this new v-belt is designed to do a better job . . . easier!

New VEELOS

TD and TE Adjustable V-belt for D and E Drives

It installs in minutes. Links are quickly joined by easy-to-use cup-washers and T-screws to make up individual belts.

It lasts for years. New high-tensile strength link combined with new stud, cup-washer, and T-screw gives added durability.

VEELOS IS KNOWN AS VEELINK OUTSIDE THE UNITED STATES.

Get the complete story of this new v-belt for D and E drives. Send now for new 8-page illustrated catalog.

VEELOS THE LINK V-BELT

MANHEIM MANUFACTURING & BELTING CO.
650 Manbel St., Manheim, Pa.

2GT

Adjustable to Any Length • Adaptable to Any Drive

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Having Conveying Trouble of ANY KIND?

If you convey ANYTHING that's hot, sharp, powdered, oily, abrasive, sticky, wet, stringy or granulated, INVESTIGATE this new conveyor.

SELF-CLEANING Natural-Frequency Conveyors have taken on some of the toughest, roughest, hard-to-handle products in America—are now conveying them smoothly, quickly and efficiently, *with an absolute minimum of wear, tear, maintenance and down-time!*

These spectacular new conveyors work on a unique vibrating principle which substitutes the natural resonance action of rugged coil springs, for brute force. Where up to 90% of the power output of a "brute-force" conveyor may be required to operate its moving parts—and only about 10% to convey its load—substantially no more power is required to *operate the Natural-Frequency Conveyor, empty, than to run the motor alone!*

Bulletin 111 will bring you all the facts about Carrier Natural-Frequency Conveyors, including vertical vibrating spiral elevators. *Write today!* Carrier Conveyor Corporation, 2144 Frankfort Avenue, Louisville 6, Ky.

CHECK THESE CARRIER ADVANTAGES!

HIGH CONVEYING SPEED (Up to 100 feet per minute)
GREATER CAPACITY (Up to 200 tons per hour)
LESS POWER REQUIRED (About one-third as much as "competitive" equipment)
LESS MAINTENANCE & DOWN-TIME (Less power + good design = trouble-free performance)
NO DAMPENING UNDER LOAD (Designed with extra power for specified load, with positive stroke)
SELF-CLEANING (Continuous, smooth trough —no pockets)
COMBINES PROCESSING WITH CONVEYING (Can screen, dry, cool, dewater, blend, etc.)
WIDTHS FROM 6" TO 48" LENGTHS FROM 5' TO 250' (With pans 16 ga to ½" plate, of any metal, open or enclosed)
BALANCED, VIBRATION-FREE UNITS AVAILABLE (For use on ceilings or light floor construction)

CARRIER NATURAL-FREQUENCY CONVEYORS

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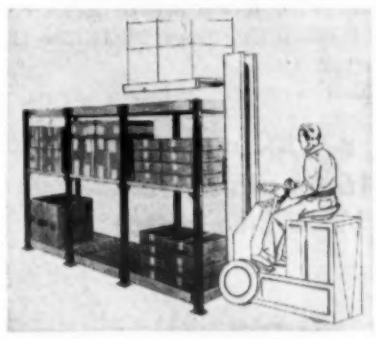
CONTINUOUS STENCILS made on tabulator or typewriter

Continue-Matic continuous marginal punched stencils have a printing area of 3¼ in. wide by 2 in. deep. Stencil preparation can be on automatic tabulating equipment or on electric or manual typewriters. They are perforated every 3 in. for use on Tab-O-Graph model K machine for addressing preprinted tags and labels or Web-O-Print model RJ-1 hand printer for addressing directly on shipping containers. Carbon sheet between stencil and carrier sheet permits proofreading. Use can also be on tape control typewriters and on machine using embossed addressing plates. Made by **Weber Addressing Machine Co.,** Weber Label & Marking Systems Div., 202 W. Central Rd., Mt. Prospect, Ill.

▲ For more details circle **NED-407 A5** on enclosed inquiry slip ▲

BULK STORAGE BIN assembled and disassembled by hand



Tools, fasteners and special labor are not required to assemble or disassemble the Bulk Bin, built to be top-loaded with pallets and hand loaded on lower shelves. Units can be asembled continuously, with additional units joined to the original unit by adding two posts and necessary shelves. Posts are slotted to hold six 3 x 3-ft intermediate shelves, with 6-in. increments between shelves. Capacity per shelf is 1200 lb. All brackets, although interchangeable, will fit uprights in only one way. Uprights, feet and brackets are made of heavy gage steel and shelves and cross bars are of structural lumber. Bulk bins can be disassembled and reused with 100 per cent salvage. Made by **Sturdi-Bilt Steel Products, Inc.,** Dept. BGM, 2501 W. Peterson Ave., Chicago 45, Ill.

▲ For more details circle **NED-408 A5** on enclosed inquiry slip ▲

Employee Awards & Medals

American Emblem Co.—Methods of setting up a service award program, choosing the emblem design and a wide variety of presentation methods are described in 16-page booklet "Industry's Medals of Honor." Award programs covered have been tested in use for bringing about better employee relations.

▲ For more details circle **NED-409 A5** on enclosed inquiry slip ▲

▲ For more details circle **NED-410 A5** on enclosed inquiry slip ▲

CESCO RIGHT... before your Eyes!

Assemble Your Own Combinations

Items A, B and C can be used with either items 1 or 2 illustrated above so you can make six different combinations. The old-fashioned way you would buy a helmet and headgear, a shield and headgear, and so on until you had six combinations (twelve items) to do the same thing these five separate pieces will do.

Save buying extra parts... save money. On your next order specify CESCO interchangeable helmets and face shields.

They're—*"Right... before your Eyes."*

Send TODAY for CESCO literature

CHICAGO EYE SHIELD COMPANY • 2322 Warren Boulevard, Chicago 12, Illinois

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Dallas, Detroit, East Orange, Houston, Indianapolis, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City D. F., Milwaukee, Montreal, Peoria, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa, Wichita

▲ For more details circle **NED-411 A5** on enclosed inquiry slip ▲

Linde synthetic sapphire

...for excellent optical transmission

PLUS physical strength and chemical inertness

Sapphire is hard, strong, chemically inert and transmits a high percentage of radiation in the important ultra-violet and infra-red regions. At 1750A forty per cent of the radiation is transmitted by a .059 inch section; at 5.7 microns forty per cent is transmitted by a .100 inch section. This unique combination of properties makes it ideal for optical systems that require resistance to abrasion and corrosion and high temperature strength as well as excellent optical transmission.

Now single-crystal sapphire windows are available in diameters up to 2 inches in several finishes. For further information, call or write your nearest LINDE office.

LINDE AIR PRODUCTS COMPANY
A DIVISION OF UNION CARBIDE AND CARBON CORPORATION
30 East 42nd Street, New York 17, N. Y. UCC Offices in Other Principal Cities

In Canada: DOMINION OXYGEN COMPANY
Division of Union Carbide Canada Limited, Toronto

"Linde" is a registered trade-mark of Union Carbide and Carbon Corporation.

▲ For more details circle **NED-412 A5** on enclosed inquiry slip ▲

For faster, lower cost assembly...

You'll get big savings on assembly operations with Stackbin Assembly Bins. Work station layouts are more efficient. Parts are kept close to worker's hands . . . reaching and fumbling is eliminated. Shallow angle lip is just right for finger tip control. Operators can select with both hands. Sloping bottom feeds parts continually toward the front. With adjustable hoppers, there are always plenty of parts when and where they're needed.

Stacking feature permits rigid setups, allows flexibility when layout is changed.

Stackbin Assembly Bins feature all-welded construction with smooth, folded edges. 6 sizes with straight or tapered sides. Also available with rear-loading feature.

WRITE TODAY for full information on the Stackbin System of economical materials handling and storage.

Stackbin Corporation, 1081 Main Street, Pawtucket, R. I.

Mfgd. and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

STACKBIN® "Stacked and Still Accessible" SYSTEM

▲ For more details circle **NED-413 A5** on enclosed inquiry slip ▲

Save! ON SWITCHES

FOR APPLIANCES, INSTRUMENTS, TOYS, RADIOS, TV SETS, SMALL MOTORS, etc.

Low-priced Stackpole line switches in 22 different styles provide practically any needed switching arrangement. Types rated from .5 to 3 amperes. Underwriters approved. Write for Switch Bulletin RC-9B.

Electronic Components Division
STACKPOLE CARBON CO., *St. Marys, Pa.*

STACKPOLE

Fixed and Variable Resistors • Iron Cores • Ceramag® ferromagnetic Cores • Molded Coil Forms • Low-Value Capacitors, etc.

▲ For more details circle **NED-414 A5** on enclosed inquiry slip ▲

Cut Coupling Size & Weight with

RUBBER TECK'S
RIGID, LIGHTWEIGHT, STAINLESS STEEL
DUCT CONNECTOR

Proven and accepted in the aviation industry because of its compactness and weight economy. Now available for all industries requiring rigid but lightweight connectors. Easy to install. Gases, liquids or semi-liquids can be handled to advantage. Available in aluminum for tube sizes ¼" to 2½" and in stainless steel ¼" to 4" O.D.

OTHER RUBBER TECK PRODUCTS: Flexible Breakaway Connectors • Duo-Seals • Flexible Hot Air Duct Connectors • Flexible Fluid Line Connectors

Write for data sheets on the complete line

RUBBER TECK, Inc. GARDENA, CALIFORNIA

ENGINEERING SERVICE REPRESENTATIVES:

RUBBER TECK SALES & SERVICE CO.
8479 Higuera St., Culver City, Calif.
Texas 0-6836
5439 Harford Rd., Baltimore, Md.
Clifton 4-9671
60 East Bridge St., Berea, Ohio
Berea 4-7837

THOMSON ENGINEERING SERVICE
554 Summit, Fort Worth, Texas
723 Broadway, Wichita, Kansas
4378 Lindell, St. Louis, Missouri

RANDALL ASSOCIATES, INC.
Room 203, White Bldg.
Seattle, Wash.

▲ For more details circle **NED-415 A5** on enclosed inquiry slip ▲

helps prevent colds

Production line and office workers can now work in absolute comfort

The new low priced ELECTRO MAT throws off a gentle warmth that keeps workers healthy, happy and comfortable. 14" x 21" portable foot warmer is safe and economical . . . consuming less power than a 75 Watt light bulb. It is made of high quality neoprene rubber.

Attention Employers

Increase the efficiency of your employees and help prevent colds which cause absenteeism by equipping each employee with an Electro Mat.

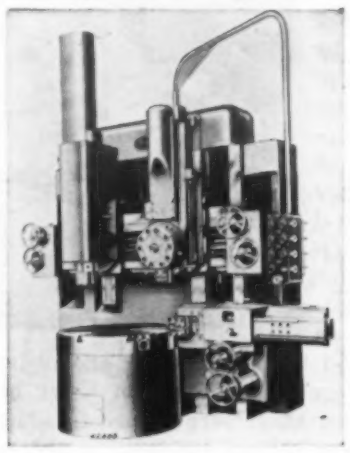
Mail check or money order today
Only **$6.95** f.o.b. factory.

IMPORTANT SAVING: If 6 or more Electro Mats ordered price is only $5.95
Please send me: ☐ Electro Mat at $6.95 each.
Enclosed is my check ☐ money order ☐
☐ C.O.D. I am enclosing $1.00. Will pay postman balance of $5.95 plus C.O.D. and freight charge
Name _____
Street _____ Zone _____
City _____ State _____
10 Day Money Back Guarantee
INTERSTATE RUBBER PRODUCTS CORP., Dept. 114
908 Avila St., Los Angeles 12, California

Dealer Inquiries Invited.

▲ For more details circle **NED-416 A5** on enclosed inquiry slip ▲

VERTICAL TURRET LATHE
hydraulic shifter allows control of all action from one pendant station

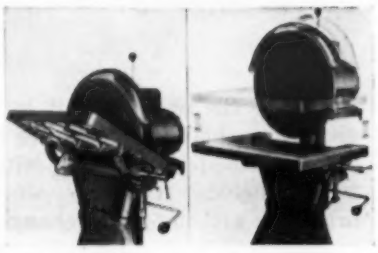


Redesigned version of company's side-head vertical turret lathe features unusual hydraulic shifter unit which makes it possible to control all functions of machine from single, movable pendant station. Pendant uses directional lever action instead of push buttons for ease of operation and safety. Full range of 20 table speeds and 16 feeds is quickly obtainable through use of dials on side of pendant.

This Cut-Master model 75 lathe has table support bearing which combines radial and thrust roller actions. It can be converted to a completely automatic machine by installing Bullard Man-Au-Trol attachment. With other available attachments, machine can also be adapted to single or double dimensional contouring controls. It is built in 26, 36, 46, 56, 66 and 76-in. table sizes with a variety of head combinations. Made by **Bullard Co.,** Dept. NED, 286 Canfield Ave., Bridgeport 2, Conn.

▲ For more details circle **NED-417 A5** on enclosed inquiry slip ▲

DISK GRINDER & SANDER
has 15 or 16 in. diameter disk and a ½ to 2-hp motor



Wood, metal or plastic materials can be rapidly worked on this Apex disk grinder and sander, offered with either 15 or 16-in. diameter disk and a ½ to 2-hp three-phase motor. Features are location of controls close to operator's right hand and a forward and reverse switch for left and right hand jobs. Disk guard cannot flip off and will roll back when work is handled near top of disk.

Cadmium-topped 14 x 22-in. table has filler bar to prevent work from catching and tapered bearings adjustable to eliminate end play. It is counterbalanced for moving up or down in single motion to expose full disk surface. Easily-read, 4½-in. dial allows accurate setting of table at any angle from 45 degrees up or down. Table is kept clean by impeller-type disk which actually forces dust into bag. Made by **Rankin Bros. Engineering & Sales Corp.,** Apex Div., 11104 S. Alameda, Lynwood, Calif.

▲ For more details circle **NED-418 A5** on enclosed inquiry slip ▲

IPCO
ECONOMY TRAFFIC LINER

FOR MARKING TRAFFIC LANES IN PLANTS, LOADING PLATFORMS, PARKING AREAS, STORAGE ROOMS, ETC.

NO BRUSHES
NO SPRAY OR POWER
NO UPKEEP
NOTHING TO CLEAN

Low in price, designed for use where moderate amount of line striping is required. Operates on a roller principle. Lines are easily and quickly applied to any firm surface. Works close to piled material or other projections. Uses any kind of "zone" paint. Available for marking line widths of 1" – 2" – 3" – 4".

WRITE FOR BULLETIN NO. 5

IPCO *Safety Equipment for all Industries*
INDUSTRIAL PRODUCTS COMPANY
2807 N. Fourth Street, Philadelphia 33, Pa.

▲ For more details circle **NED-419 A5** on enclosed inquiry slip ▲

SLY "ECONOMY" DUST FILTERS
Small, Compact, Inexpensive

The Sly ECONOMY Dust Filter is especially suited for collecting the dust from individual machines or from a small group of dust points in close proximity to each other. It is compact yet it has an abundance of filter cloth which helps to maintain a uniform suction.

This filter offers: (1) *High Efficiency* with complete dust collection; (2) *Low Power,* a 3 HP motor will handle 1400 cu. ft. per minute; (3) *Long Life* because a very liberal amount of filter cloth is used; (4) *Compactness* because the filter cloth occupies a minimum of space; (5) *Effective Bag Cleaning* by means of a simple shaking device.

Made in four standard sizes, to filter dust out of 300 to 1400 cu. ft. air per minute. Write **The W. W. Sly Manufacturing Co.,** 4748 Train Avenue, Cleveland 2, Ohio. There are experienced Sly engineers in New York, Chicago, Philadelphia, Syracuse, Detroit, Buffalo, Cincinnati, St. Louis, Minneapolis, Birmingham, Los Angeles, Toronto. Advt.

▲ For more details circle **NED-420 A5** on enclosed inquiry slip ▲

STURTEVANT *Dry Batch* **BLENDERS**

are the answer to
FAST, ECONOMICAL MIXING

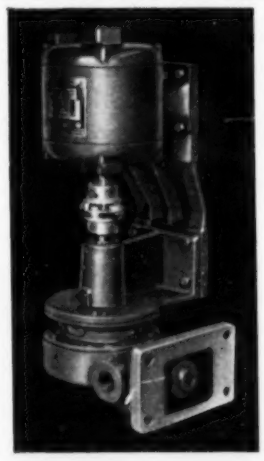
Because of the unique design of its mixing chamber, and the 4-way mixing action which brings two or more substances together, the Sturtevant Dry-Batch Blender does a more rapid mixing job than other machines and, at the same time, it is complete and thorough in every particular. The substances may be of different weights and physical properties, and may be either dry, partly dry, or a mixture of both. Write for bulletin today.

Compare These Advantages

- Only one lever controls both receiving and discharging for simplicity of operation. Hand wheel operates rack and pinion slide at feed opening.
- 4-way mixing action speeds production . . . assures thorough blends.
- "Open-door" accessibility permits easy, fast, thorough cleaning.
- Single aperture drum for both intake and discharge.
- Unusually efficient scoops pick up materials to effect thorough mixing as drum revolves.
- 9 models . . . a size for every job . . . from 10 cu. ft. to 900 cu. ft. batches.

STURTEVANT MILL COMPANY
114 CLAYTON STREET, BOSTON 22, MASSACHUSETTS
DESIGNERS & MANUFACTURERS OF CRUSHERS • GRINDERS • SEPARATORS CONVEYORS • MECHANICAL DENS AND EXCAVATORS • ELEVATORS • MIXERS

▲ For more details circle **NED-421 A5** on enclosed inquiry slip ▲



PIONEER

Offers a Complete Line of Pumps for Coolants, Lubricants and Abrasive Liquids . . . Over 400 Models Available . . . Flange-mounted and Submergible

★

PIONEER
Impeller Type
0 to 174 gpm—1/2 to 5 hp—850 to 3450 rpm

ROLLWAY Positive Displacement Type
1/8 to 60 gpm—200 to 500 rpm—15 to 35 psi

Model shown above is one of a complete line of flange-mounted type pumps which provides strict conformity to J.I.C. standards.

Send today for this FREE Catalog

PIONEER PUMP DIVISION
Detroit Harvester Company
14300 Tireman Ave. Detroit 28, Michigan

▲ For more details circle **NED-422 A5** on enclosed inquiry slip ▲

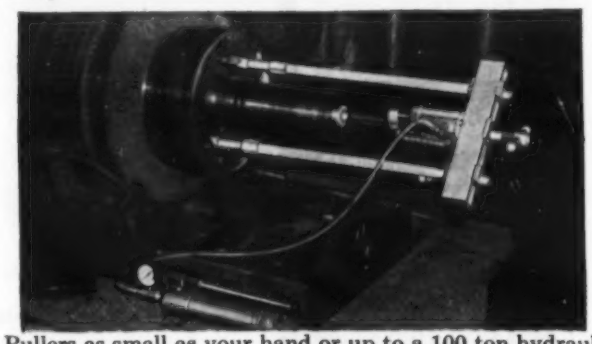
WHAT ARE YOU TRYING TO PULL?

Important information that will help save time, parts and tools on every job

- ☐ GEAR
- ☐ BEARING
- ☐ PINION
- ☐ KING PIN
- ☐ COUPLING
- ☐ WHEEL
- ☐ PULLEY
- ☐ SLEEVE
- ☐ HOUSING
- ☐ SHEAVE
- ☐ RACE
- ☐ AXLE
- ☐ SHAFT
- ☐ COLLAR
- ☐ OTHER

Pulling and installing jobs are in many cases an unnecessary headache. Without proper tools, expensive parts and equipment are broken and machinery is down for long periods of time.

This is unnecessary for there are inexpensive and practical pulling tools to do every job quickly and safely. Check the jobs shown here. We can help you by suggesting the right tool for the right job and telling you how to do it easily.



Pullers as small as your hand or up to a 100 ton hydraulically operated tool are available to you in the OTC line. Here a 50 ton OTC hydraulic ram is removing a rotor and armature from a motor generator shaft. Get the answers to your pulling problems by writing OWATONNA TOOL COMPANY, 436 Cedar St., Owatonna, Minn.

▲ For more details circle **NED-423 A5** on enclosed inquiry slip ▲

Just drill and drive

SEL-LOK SPRING PINS

Sel-Lok Spring Pins are slotted tubular pins that lock by spring action when driven into drilled holes. They eliminate the need to hold close tolerances and perform costly tapping, reaming, peening or milling operations. The chamfered ends make starting easy; the rounded edges of the slot, found only on Sel-Lok Spring Pins, eliminate scoring of holes.

Use Sel-Lok Spring Pins as rivets, hinge pins, keys; to replace tapered, grooved and cotter pins. They are available in a full range of diameters and lengths from .062 x 1/4" to .500 x 4". For more information, write to STANDARD PRESSED STEEL CO., Jenkintown 24, Pa.

SEL-LOK SPRING PIN DIVISION **sps** JENKINTOWN PENNSYLVANIA

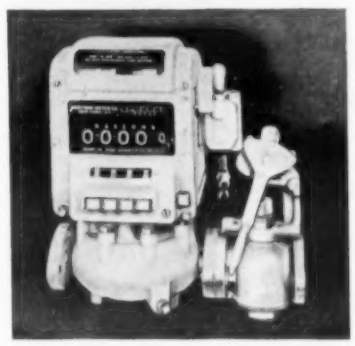
▲ For more details circle **NED-424 A5** on enclosed inquiry slip ▲

STORAGE RACK
comprises individual welded units

A simple, flexible system for permanent or temporary storage of bar stock, rods and pipe is provided by Mini - Module storage rack made up of individual prefabricated module units. Units have heavy duty reinforced sheet steel and tubular construction, welded together for maximum structural strength. Pyramidal nesting caps on corner posts allow fast assembly and disassembly of units and assure rigid, vertically interlocked tiers. These are expandable in width, height and length. Module units are offered in standard sizes of 12 x 12, 15 x 15, 18 x 18 and 20 x 20 in. Made by **Jarke Mfg. Co.,** 5403 Broadway, Chicago 40, Ill.

▲ For more details circle **NED-426 A5** on enclosed inquiry slip ▲

LIQUID METER
integral switch can be set to control equipment at end of flow



This Auto-Switch meter has a built-in explosionproof electric switch that is actuated automatically when any desired quantity of liquid has passed through the meter. Switch can be used to control motors, pumps, valves or other cycling operations by means of suitable relays or other devices. Meter is available with or without a mechanically coupled Auto-Stop valve which is also actuated by the tripping mechanism in the meter. Register is easily set by means of pushbuttons to any desired number of gallons or pounds of fluid to be delivered before switch operates. Opening of Auto-Stop valve starts the cycle. When no Auto-Stop valve is used, cycle is initiated by turning knob at back of register. Emergency stop button permits stopping flow at any time. Large numerals on face of meter indicate amount of flow.

Switch is available on Neptune type S meters in sizes from 1 to 4 in. for rates of flow up to 500 gpm. In combination with the Auto-Stop valve, it is offered in 1 to 3-in. sizes for flow rates to 300 gpm. Switch is rated 15 amp and is single-pole single-throw normally-open or normally-closed Microswitch. Made by **Neptune Meter Co.,** 19 W. 50th St., New York 20, N. Y.

▲ For more details circle **NED-427 A5** on enclosed inquiry slip ▲

R&M HOISTS • CRANES • WINCHES

NEW LOW PRICE ELECTRIC CHAIN HOIST

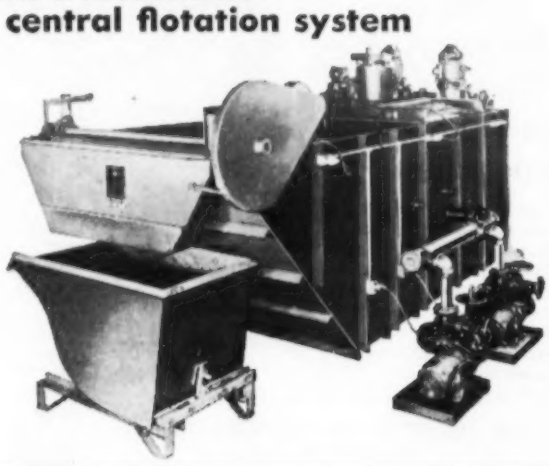
capacities to 2000 lbs.
lifts up to 60 ft.
prices start at $188.00

Robbins & Myers quality throughout, JC chain hoists are available from stock now, at new low prices! Features include: Special R & M hoist motor—Unit cast aluminum frame—Weston-type load brake—Sealed bearings throughout—Welded alloy steel link chain—Forged steel hook—Speed choice 34, 17, or 9 f.p.m.—Pendent rope control—Hook or trolley mounting. Write for Bulletin No. 852-B.

take it up with **ROBBINS & MYERS, INC.**
SPRINGFIELD, OHIO | BRANTFORD, ONTARIO

▲ For more details circle **NED-428 A5** on enclosed inquiry slip ▲

THOUSANDS SAVED in oil coolants, grinding wheels, manhours
with a HOFFMAN central flotation system



Outstanding results at
INTERNATIONAL HARVESTER COMPANY, CHICAGO, ILL.
$71,942.61 saved in first year of installation.
47.4% reduction in grinding wheel cost.
134% increased production per grinding wheel.

At GENERAL RAILWAY SIGNAL COMPANY, ROCHESTER, N. Y.
$3800 savings in labor costs through elimination of grinder sump tank cleaning.
50% increase in grinding wheel life.
Substantial coolant savings.

HOFFMAN Flotation Units employ the only fully automatic method for effective, continuous removal of insoluble waste matter from soluble oil and water coolants in wet grinding operations. They require no attention . . . use no filter aids, screens or bags.

HOFFMAN coolant clarification does not rely on gravity alone. Heavier solids settle to the bottom but light minute particles are aerated out of the coolant and skimmed off into the dirty coolant compartment . . . sludge is discharged in near-dry state for easy removal.

Downtime and labor for cleaning sumps are eliminated. The exceptional clarity of the coolant increases the output of your grinders and maintains uniform quality. Wheel surfaces are kept in optimum grinding condition longer . . . need fewer redressings.

HOFFMAN standard flotation units are available in sizes ranging from 20 to 1500 GPM. Larger systems are designed to meet flow rate requirements and plant conditions. Where a central system is not feasible, smaller units for individual machine tool application are recommended.

Let a HOFFMAN Industrial Filtration Engineer survey your plant and suggest the filtration unit best suited for your needs.

Write for full information on the design and operation of the HOFFMAN Flotation Units. We'll be glad to send you also reports from industrial users of these systems.

INDUSTRIAL FILTRATION DIVISION
U. S. HOFFMAN MACHINERY CORPORATION
DEPT. N.E.D. • 105 FOURTH AVENUE • NEW YORK 3, N. Y.

▲ For more details circle **NED-429 A5** on enclosed inquiry slip ▲

Here's How The Makers Of

ADMIRATION CIGARS

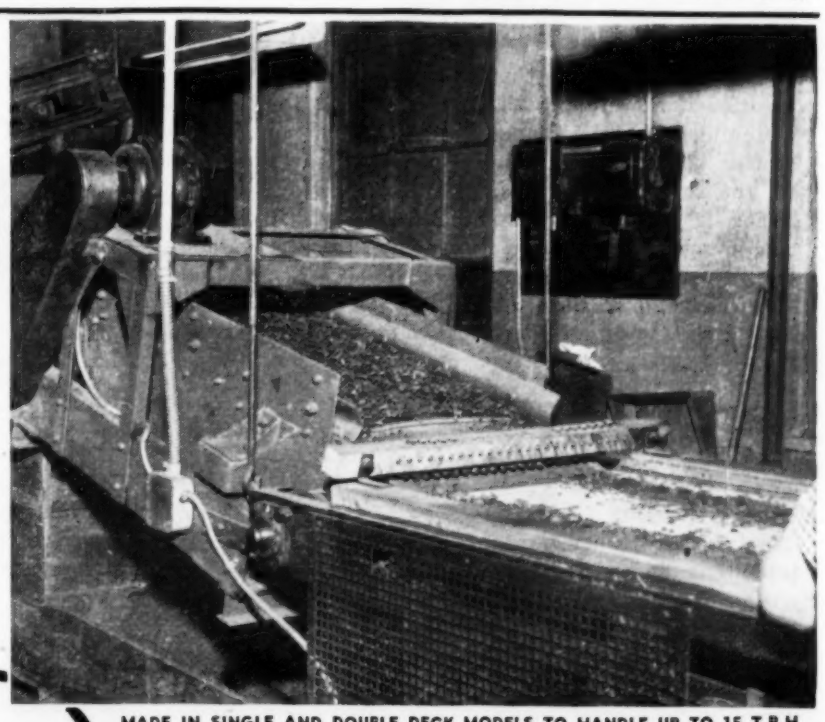
Find Good Use For This

MIGHTY-MITE

VIBRATING SCREEN

Maintaining high standards for purity and uniformity in the making of famous Admiration Cigars is the constant goal of E. Regensburg & Sons, Allentown, Penna.

For instance, here you see the care given the preparation of short filler which is used in some sizes of Admiration Cigars. The tobacco is fed onto a single deck Mighty-Mite vibrating screen which quickly and efficiently removes tobacco dust and undersize particles before it reaches a conveyor belt for final hand cleaning. How valuable is the Mighty-Mite in this operation? Well, in the words of Edward B. Regensburg it easily handles 1,000 pounds in an eight hour day and during its two years of constant operation has required no maintenance.



MADE IN SINGLE AND DOUBLE DECK MODELS TO HANDLE UP TO 15 T.P.H.
SIZES 1½'x4' to 2'x8' • WIRE CLOTH OPENINGS TO MEET ANY REQUIREMENT

Remember . . .
WHEN THE LOAD IS LIGHT SCREEN IT RIGHT WITH MIGHTY-MITE

Get The Labor Saving Facts NOW! • Send For NEW Literature

SCREEN EQUIPMENT CO., INC. BUFFALO 25, N. Y.
One of America's Largest Makers of Vibrating Screens Exclusively

▲ For more details circle **NED-425 A5** on enclosed inquiry slip ▲

NEW

The Barnstead
PRESSURE BANTAM
DEMINERALIZER
delivers
MINERAL-FREE WATER
at point of use

Delivers demineralized water in continuous flow under pressure at from 5 to 25 gallons per hour. Connects to any water line. Like turning on a faucet. Minerals are chemically removed from water by ion-exchange. No heat or cooling water employed. Uses high capacity replaceable cartridge. Hundreds of uses in industry. Bulletin #128 describes most of them.

Write for Bulletin #128

Barnstead STILL & STERILIZER CO.

16 Lanesville Terrace, Forest Hills, Boston 31, Mass.

▲ For more details circle NED-430 A5 on enclosed inquiry slip ▲

DESPATCH BURN-OFF OVEN

Saves 52 hours in ONE operation!

Typical process load of stators at Am. Electrical & Maintenance Company, Philadelphia. According to this company, "Stator frames, due to complete burning, give the appearance of new motors and result in compliments from our customers."

FOR ALL SHOPS THAT MANUFACTURE OR REPAIR MOTORS

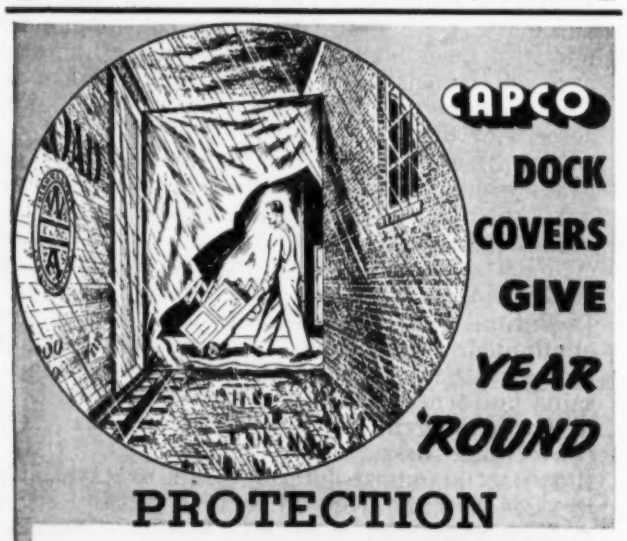
● YEARS OF RESEARCH and coordination with motor manufacturers have resulted in this thoroughly proven Burn-Off Oven design. Here you have faster motor stripping at a minimum of expense. Extra-heavy construction combines with complete, controlled heat distribution for economical performance every day. RCS-5 Oven 24" x 36" x 48"; RCS-6 Oven 48" x 60" x 66". Gas fired.

Write for RCS Bulletin

DESPATCH OVEN CO. Established in 1902

DESPATCH OVEN COMPANY
325 Despatch Bldg.
Minneapolis 14, Minn.

▲ For more details circle NED-431 A5 on enclosed inquiry slip ▲



CAPCO Dock Covers completely enclose the space between car and building doorways protecting loading and unloading during bad weather...preventing accidents... insuring against loss of heat or refrigeration. 51 different models in any size for every loading problem.

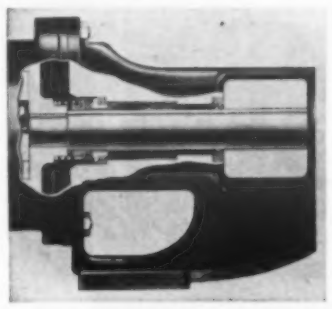
CAPCO

Write for literature and name of nearest distributor.

622-24 PROSPECT AVENUE • KANSAS CITY 24, MISSOURI

▲ For more details circle NED-432 A5 on enclosed inquiry slip ▲

LIQUID PUMPS
mechanical seal eliminates packing



Mechanical seals now used in Viking heavy and normal duty pumps with capacities from 10 to 300 gpm afford leakless operation and eliminate the need to pack pumps. Seals are offered on unmounted and mounted pumps with gear, V-belt, direct, double gear, or V-belt and gear drives. Pumps are suitable for pressures to 200 psi on lubricating liquids and up to 100 psi on nonlubricating liquids. Carbon graphite bushings which require no external lubrication are also a feature. Seals are made of iron and steel for handling petroleum products or vegetable oils, or of bronze, stainless steel and Ni-resist for water, salt water and brines. Buna N synthetic rubber parts are used in all seals. Made by **Viking Pump Co.**, Cedar St., Cedar Falls, Iowa.

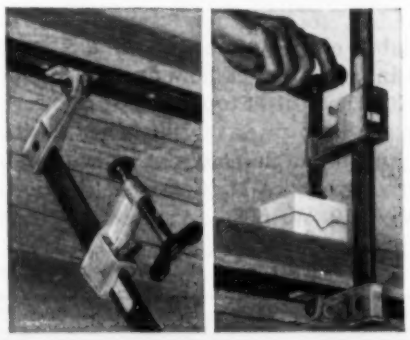
▲ For more details circle NED-433 A5 on enclosed inquiry slip ▲

CIRCUIT BREAKER
rated at 400 amperes

KL series of circuit breakers has been expanded to include a 400-amp model with molded case which measures 5½ x 9 x 15½ in. It is designed for use in panelboards, switchboards, motor controls, bus duct plugs and individual enclosures. Thermal - magnetic type breaker has quick-make, quick-break operating mechanism. Interchangeable trip units provide continuous rating versatility from 125 to 400 amp. Common trip operation is built-in and an over-current on any pole breaks all poles simultaneously. Shunt and undervoltage trips and auxiliary and alarm switches can be mounted inside the case. Made by **I-T-E Circuit Breaker Co.**, 1900 Hamilton St., Philadelphia 30, Pa.

▲ For more details circle NED-434 A5 on enclosed inquiry slip ▲

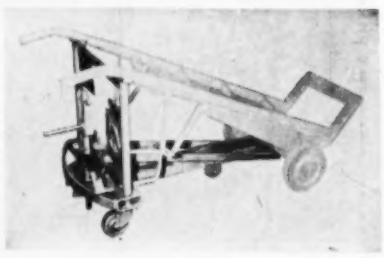
TRACK-MOUNTED CLAMP
permits lateral clamp adjustment



Jorgensen hinged clamp which swings on its mount up to clamping position, or swings out of the way when not in use, is now available with No. 2203 steel track for lateral adjustment. Track permits the steel bar clamps to be prepositioned at any point along the track for use on changing set-ups. Clamps and/or track can be installed on the under side of bench or sawhorse, or on the side, end or top of any work surface or jig. Track is furnished in 24-in. sections which can be cut or butted together to form longer lengths. Made by **Adjustable Clamp Co.**, Dept. ND, 417 N. Ashland Ave., Chicago 22, Ill.

▲ For more details circle NED-435 A5 on enclosed inquiry slip ▲

HAND TRUCK CARRIER
adapts truck for dragline system



Two - wheel hand truck, carrying a drum or any other load, can be used on an infloor-dragline system when locked to a Dragmaster Carrier. Truck is positioned for safe and secure carrying. Its axle is locked to the carrier by a foot-operated latch so that truck and load cannot fall off if the dragline is stopped. Carrier has a cam release for engaging the line and three rubber-tired swivel casters with sealed bearings. Made by **Lewis-Shepard Products, Inc.**, Dept. R-64, Watertown 72, Mass.

▲ For more details circle NED-436 A5 on enclosed inquiry slip ▲

see them in operation at the Plant Ma

booths
627-631
International Amphitheatre
CHICAGO, ILL.
Jan. 24-27, 1955

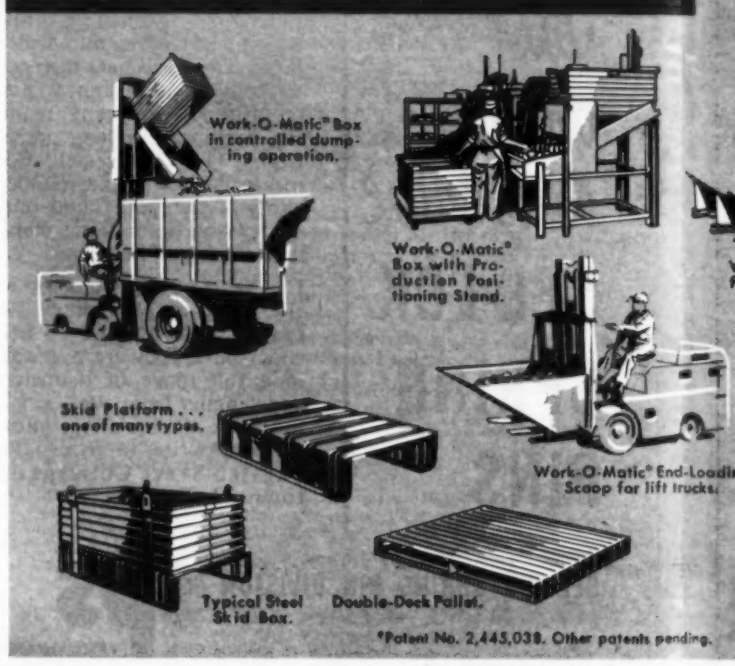
if you are unable to attend the show—

Write for Descriptive Engineering and Equipment Bulletins

Honan-Crane Corpor
a subsidiary of Houdai

▲ For more details circle NED-437 A5

Select the money-saving units you need from
INDUSTRY'S BROADEST LINE OF
Material Handling Containers



▲ For more details circle NED-438 A5

How to
REDUCE BEARING REPLACEME

Get The ONE *Spherical That Las*

2 to 3½ times LONG

That's right—this *improved* SKF (Type "C") Spherical Bearing provides, size for size, 2 to 3½ times more life, up t increased capacity . . . more than any design available anywhere no increase in price.

Obviously, when you tell your SKF Distributor you wan Type "C" Spherical, you're minimizing future replacement cost. And your SKF Distributor has many available sizes in stock.

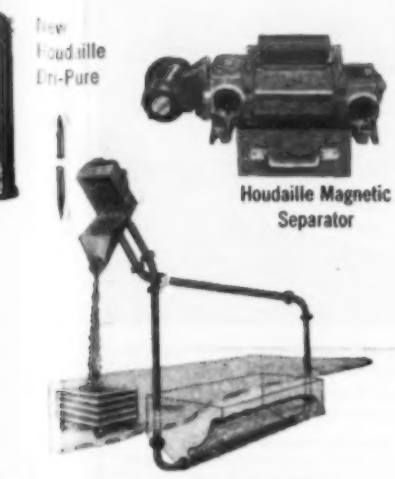
Have him *show* you how the famous SKF spherical design has been improved to deliver this exceptional capacity and life. SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.—*manufacturers of* SKF *and* HESS-BRIGHT® *bearings.*

▲ For more details circle NED-439 A5

ant Maintenance and Engineering Show

LTERS • AUTOMATIC CONVEYORS

SEVERAL NEW MODELS WILL BE SHOWN



● See for yourself . . . how Honan-Crane equipment keeps oils and coolants free from all types of harmful contamination. See how Honan-Crane automatic units prevent downtime and costly repairs . . . increase the productive capacity of your machines . . . improve your overall plant operation.
Sales Representatives will be on hand to demonstrate the equipment and to answer your questions.

Corporation • 405 Wabash Avenue • Lebanon, Indiana
Houdaille-Hershey Corporation

NED-437 A5 on enclosed inquiry slip ▲

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ACEMENT COST
That Lasts
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Spherical Roller
re life, up to 50%
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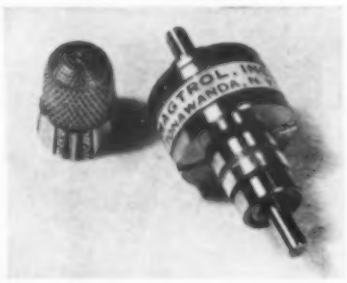
SKF®
BALL AND ROLLER BEARINGS

NED-439 A5 on enclosed inquiry slip ▲

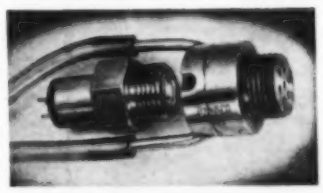
MINIATURE CLUTCH
transmits 8 oz-in. of torque



Limited space requirements, as in aircraft and guided missile instrumentation work, can be met by the Micro-Clutch. Miniature unit is available as a clutch and a clutch-brake. It has maximum diameter of 63/64-in. and overall length of 2⅛ in., including both shaft extensions. Despite unit's small size, it is capable of transmitting 8 oz-in. of torque with a control current of 65 ma. Made by **Magtrol, Inc.,** 533 S. Niagara St., Tonawanda, N. Y.

▲ For more details circle **NED-440 A5** on enclosed inquiry slip ▲

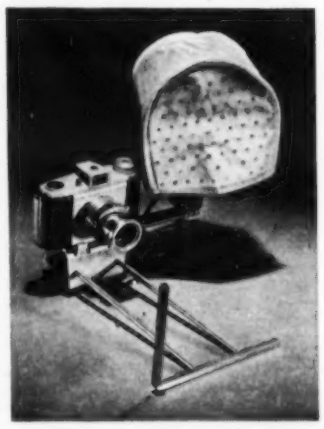
WATER-COOLED ADAPTOR
for standard pressure pickups



Compact size water-cooled adaptor for standard Dynisco pickups permits pressure measurements at temperatures up to 4000° F. Adaptors are available to receive either threaded or flanged pickups having sensitive diaphragms of 9/16 or ¼-in. diameter. Adaptor has ¾-in.-16 threaded mount and its small size facilitates use in small tubes and manifolds. It has several small tubes through which gas or fluid pressure passes to reach sensitive diaphragm of pressure pickup. Cool tap water is circulated through jacket which encloses tubes. Hot fluid is thus cooled before coming in contact with pickup. Tubes are short enough to transmit pressure variations, at frequencies up to 3000 cps, to pickup without appreciable phase shift. Made by **Dynamic Instrument Co.,** Dept. NED, 28 Carleton St., Cambridge 42, Mass.

▲ For more details circle **NED-441 A5** on enclosed inquiry slip ▲

CLOSE-UP ATTACHMENT
for technical color photography



Production of high quality color transparencies in industry and laboratory is facilitated by use of the technical close-up attachment. Kit for use with Kodak Pony 828 or 135 camera has $19.95 price including framing attachment, supplementary lens and filter and close-up flashguard. Outfit priced at $62.75 includes above kit, and Kodak pony 828 camera, flashholder and attachments. Two arms extending in front of camera support a half-frame which aids in locating object being photographed. Field of picture coverage is 3 x 4 in. at 6-in. distance from camera. Flashguard protects subject from heat and possible shattering of flashbulb. Made by **Eastman Kodak Co.,** Dept. E, 343 State St., Rochester 4, N. Y.

▲ For more details circle **NED-442 A5** on enclosed inquiry slip ▲

12-IN. SWING LATHES
turret and screw-cutting models

Variable speed drive or standard double V-belt drive is optional on all models in line of lathes. Four turret and four screw - cutting models are available with 12-in. swing over bed, 7¼-in. swing over saddle, 1⅜-in. spindle hole, 1-in. collet capacity and 23 and 35-in. centers. All models have cabinet with large chip capacity drop center pan and three enclosed storage compartments. Carriage rides on a two-V-way, two-flat-way bed, and spindle turns on a double row of ball bearings. Made by **Logan Engineering Co.,** Lathe Div., 4904 W. Lawrence Ave., Chicago 30, Ill.

▲ For more details circle **NED-443 A5** on enclosed inquiry slip ▲

FREE!

New Bulletin on AAF Replaceable Media Air Filters

CONTAINS complete product data on AAF's three replaceable media air filters. Each is designed for easy, economical maintenance. All feature AMER-*glas*—the versatile AAF filtering media offering such advantages as high cleaning efficiency; minimum air resistance; low cost and ease of handling.

Write for free copy of this 8-page bulletin. It's full of ideas on how you can clean air at lower cost.

AAF American Air Filter COMPANY, INC.
391 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.

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GEAR PROBLEMS? Check with- FAIRFIELD!

If you use gears in the product you make, we believe it will pay you, as it has others, to become acquainted with FAIRFIELD—the place where fine gears are produced to meet your specifications EFFICIENTLY, ECONOMICALLY! Fairfield's production facilities are unexcelled for making all kinds of accurate, automotive type gears such as are now finding wide use in all branches of industry: for tractors, trucks, and buses . . . for agricultural implements . . . for construction machinery . . . for machine tools. Ask for latest literature describing Fairfield's facilities. Your inquiry will receive prompt attention.

FAIRFIELD
Manufacturing Co.
2335 S. Concord Road
LAFAYETTE, INDIANA

▲ For more details circle **NED-445 A5** on enclosed inquiry slip ▲

▲ For more details circle **NED-446 A5** on enclosed inquiry slip ▲

CLEAN WITH STEAM

THIS EASY WAY

VAPOR UPGRADER JUNIOR
HYDRAULIC STEAM CLEANER

Faster and better steam cleaning at a low, low price! Vapor Upgrader Junior develops up to 140 p.s.i. pressure, produces steam in 70 seconds. Cuts labor costs. Lightweight, portable on easy-rolling wheels. Used indoors or out. See for yourself what "Junior" can do!

ONLY **$379** COMPLETE F.O.B. FACTORY

Dissolves and flushes away all kinds of dirt, grease, and grime. Cleans air filters, motors, tractors, machinery, rolling stock, buildings, and nearly everything else—easily and quickly.

Send for NEW Bulletin 594

VAPOR HEATING CORPORATION
80 E. Jackson Blvd., Chicago 4, Ill.
In Canada: Vapor Car Heating Co. of Canada, Ltd., 65 Dalhousie St., Montreal 3

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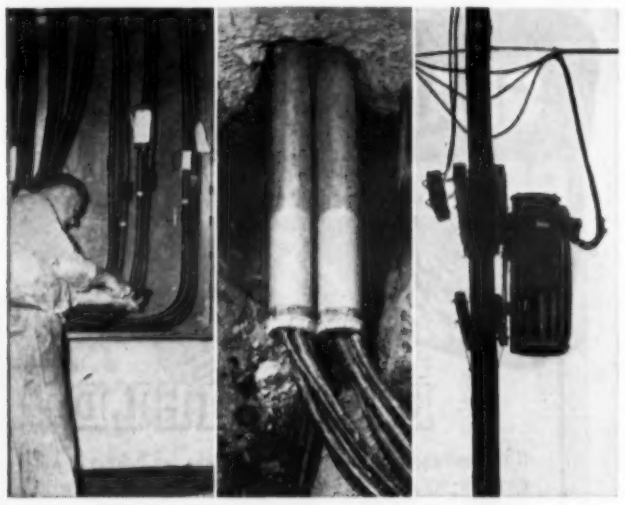

ALL-PURPOSE CABLE CUTS COST

ANACONDA's neoprene-jacketed Durasheath* cable cuts installation costs because it can be installed in ducts, buried, aerially or any combination of these—*with minimum splicing*. It reduces maintenance and replacement costs because its rugged jacket resists abrasion, moisture, corrosive chemicals and oils that shorten ordinary cable life. Anaconda has prepared a handy "SELECTION CHART" showing when and where to use Durasheath and other industrial wire and cable. Send for yours today. *No cost!* Address: Anaconda Wire & Cable Company, 25 Broadway, New York 4, N. Y.

ANACONDA®

*Reg. U. S. Pat. Off. 65067

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NEW SLIDE CHART

on *Carpenter* Stainless Steels

gives you information to help you select the proper Stainless for

Drawing	Machining
Forging	Riveting
Heading	Roll Forming, etc.

This new Carpenter chart also contains valuable data on the physical constants of many Stainless grades. For your copy, just return the coupon.

THE CARPENTER STEEL COMPANY
118 W. Bern St., Reading, Pa.

Please send me a copy of the new Carpenter Stainless Slide Chart.

NAME _____ TITLE _____
(Please Print)
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

▲ For more details circle **NED-449 A5** on enclosed inquiry slip ▲

BALL TRANSFER TABLE
moves material in any direction

Available in any length or width, ball transfer table is used at transfer points of gravity or power belt conveyor lines to move material in any desired direction. Table has ball casters on varied centers which accommodate any size carton or case, or any other object with a smooth, firm bottom. Flow directional arm mounted on a bracket facilitates directing material over the table to the proper conveyor trunk line. Made by **Speedways Conveyors, Inc.,** 181 Speedways Bldg., Buffalo 13, N. Y.

▲ For more details circle **NED-450 A5** on enclosed inquiry slip ▲

POWER ROOF VENTILATOR
31 sizes from 225 to 17,600 cfm

Extremely low silhouette is featured by Lo-Sil power roof ventilator offered in 31 sizes with capacities from 225 to 17,600 cfm and static pressures to ⅝-in. Hood is hinged and secured by two heavy draw buckles for easy inspection. Units are made of heavy gage steel, electric welded and finished with two coats of paint. Totally-enclosed, ball bearing motors, available for single or three-phase current, are mounted on vibration absorbers. Single phase motors are capacitor type for variable speed operation. Made by **Muckle Mfg. Co.,** Owatonna, Minn.

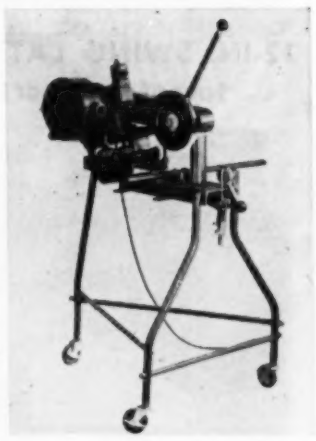
▲ For more details circle **NED-451 A5** on enclosed inquiry slip ▲

CABLE & TUBING STAPLER
fastens them to building materials

Electric cable, copper tubing and similar materials can be easily fastened to various types of building materials with this automatic cable stapler. Tool is operated by one hand, leaving one hand to hold the cable or tubing. Heavy wire staples with leg lengths up to ¾-in. are set around the wire or tube to a predetermined depth to avoid fracture of the material. Made by **Heller Co.,** 2153N Superior Ave., Cleveland 14, O.

▲ For more details circle **NED-452 A5** on enclosed inquiry slip ▲

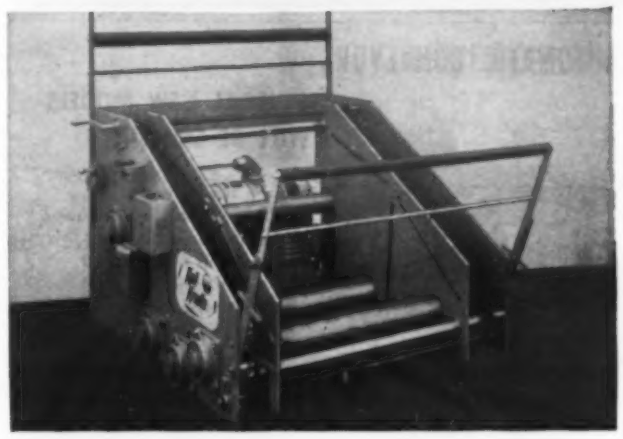
PORTABLE CUT-OFF MACHINE
has built-in deburring attachment



Fast, square, accurate cuts with minimum burr are made with this portable 10-in. abrasive cut-off machine which also has built-in deburring attachment. Burnished end is produced on cut tubing by inserting it in deburring attachment and giving tubing a half turn. Wire wheels, driven by the saw motor, produce burnished end. Cutting capacity is up to 1½-in. tubing, 1-in. standard pipe, 1-in. diameter solid bars and 2-in. structural shapes. Hand operated work holding device can be adjusted to hold material to be cut tightly on both sides of the wheel path. Power is supplied by a 1½-hp 220/440-v ac motor. Tubular stand and rubber tired wheels can be supplied for mobility. Made by **Wallace Tube Co.,** 1304 Diversey Pkwy., Chicago 14, Ill.

▲ For more details circle **NED-453 A5** on enclosed inquiry slip ▲

NEW 7000 lb. *Koil-Kradle*
feeds 40" stock from 42" rolls



benchmaster now supplies all KOIL-KRADLE requirements, standard or special, from ½ ton to 8 tons capacity.

OPERATES INTERMITTENTLY using Vari-loop Control to sustain a slack loop from which any machine can draw.

DUAL GUIDE PLATES quickly adjust for any stock width up to 40".

OPERATES CONTINUOUSLY at any constant speed within range of variable-speed driving unit.

ALL ROLLS HARDENED. Power driven rolls mounted in self-aligning bearings.

There's only one KOIL KRADLE! Write for quotations on your coil-feeding requirements.

1835 West Rosecrans Avenue
Gardena, California

benchmaster — World's largest manufacturer of small punch presses and mills.

▲ For more details circle **NED-454 A5** on enclosed inquiry slip ▲

take advantage of
LUNKENHEIMER Quality

- ★ AIR DEVICES
- ★ LUBRICATORS
- ★ GREASE CUPS
- ★ OILERS

Lunkenheimer produces the highest quality Engineering Devices, as well as the world's finest Valves. Make your machinery last longer with Lunkenheimer Lubricating Devices. Cut the high cost of compressed air leaks with Lunkenheimer Air Nozzles and Cocks. The Lunkenheimer Line includes oilers, grease cups, lubricators, cocks, nozzles, liquid gauges, and whistles. Ask for literature. The Lunkenheimer Co., Cincinnati 14, Ohio.

LUNKENHEIMER®
THE ONE *Great* NAME IN VALVES

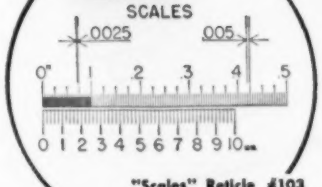
L-253-12A

▲ For more details circle **NED-455 A5** on enclosed inquiry slip ▲

New PEE-GEE POCKET Comparator

A Precision Optical Measuring Instrument *for only* $9.75!

The PEE-GEE's powerful magnifying lens makes it easy to get readings of very small dimensions, and its almost unbelievable accuracy results from extreme reduction of large "Master" layouts to tiny transparent patterns called "reticles".



"Scales" Reticle #103 comes in instrument—measures from .0025 to .5 inch and from 0 to 10MM in steps of .2 MM. Other reticles may be furnished in instrument if specified.

Reticle #103 shown here is furnished with the instrument. 6 other reticles are available in convenient case. (Price $4.25 complete.) These measure radii, angles, threads, thicknesses, diameter of circles, and linear measurements.

Write for FREE descriptive folder

See Your National Tool Co. Representative or Local Jobber
NATIONAL TOOL CO.
11300 Madison Avenue Cleveland 2, Ohio

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with....

CONE-DRIVE double-enveloping Worm Gear Speed Reducers!

'Double-enveloping'—wrapping worm and gear around each other—is the secret of Cone-Drive gear's compactness.

As a result, smaller gears can be used to carry a load when you specify Cone-Drive gears—up to ⅓ smaller housings, too.

If space saving is a design need, it will pay you to look into Cone-Drive gears and reducers . . . NOW.

Ask for Bulletin 8901-50

CONE-DRIVE GEARS
DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS
Division Michigan Tool Company
7171 E. McNichols Road • Detroit 12, Michigan

For more details circle **NED-457 A5** on enclosed inquiry slip

Increased Insulation

BETTER CONNECTIONS

JONES BARRIER TERMINAL STRIPS

Leakage path is increased—direct shorts from frayed terminal wires prevented by bakelite barriers placed between terminals. Binder screws and terminals brass, nickel-plated. Insulation, black molded bakelite. Finest construction. Add much to equipment's effect.

Jones Means Proven Quality

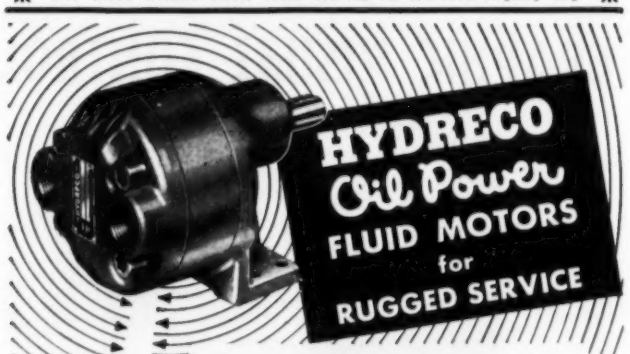
Illustrated: Screw Terminals—Screw and Solder Terminals—Screw Terminal above Panel with Solder Terminal below. Every type of connection.

Six series meet every requirement: No. 140, 5-40 screws; No. 141, 6-32 screws; No. 142, 8-32 screws; No. 150, 10-32 screws; No. 151, 12-32 screws; No. 152, ¼-28 screws.

Catalog No. 20 lists complete line of Barrier Strips, and other Jones Electrical Connecting Devices. Send for your copy.

Jones
HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED-CARR FASTENER CORP.

For more details circle **NED-458 A5** on enclosed inquiry slip



HYDRECO *Pressure-Balanced* Gear-Type Fluid Motors are built *better* to last longer, to operate efficiently at all speeds and to stand up under gruelling, shock-load service. HYDRECO Fluid Motors start, stop and reverse instantly, operate at an infinite variety of speeds, can even be stalled without damage . . . they are compact and efficient and develop high torque on starting.

Find out why the makers of America's leading hydraulically-equipped Materials Handling, Earth Moving and Industrial Machinery specify HYDRECO Fluid Motors for Rotary Power Transmission.

Write for HYDRECO Bulletin No. 139-A for full details on Constant Torque (Variable Horsepower) Fluid Motors. It's Free!

HYDRECO DIVISION
THE NEW YORK AIR BRAKE COMPANY
1108 EAST 222nd STREET • CLEVELAND 17 • OHIO

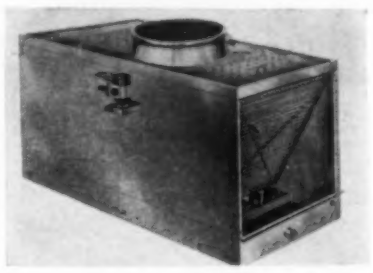
For more details circle **NED-459 A5** on enclosed inquiry slip

PERSONNEL CAR
has 5 cu ft of package space

Electrically-powered personnel transporter has a seating capacity of two persons and over 5 cu ft of carrying space for packages, mail, small parts or other cargo. Called the Widgit Red-Cap, it is powered by an 18-v motor and operates at speeds up to 10 mph. Automotive type hydraulic brakes, two forward speeds, reverse, independent wheel springing, foam rubber cushions and single front wheel are other features. Car is 60 in. long and 30 in. wide. Made by **Beall Mfg. Co.**, Dept. NED 54, Kalamazoo Ave. at 44th St. S. E., Grand Rapids 8, Mich.

For more details circle **NED-460 A5** on enclosed inquiry slip

COOLING TOWER
packaged unit rated 60 to 100 tons



Designed for air conditioning and refrigeration applications, the packaged steel double-flow Aquatower is also suitable for industrial water cooling. Its cooling capacity is in the 60 to 100-ton range. Tower is factory-assembled in three subassemblies for ease of shipping, hoisting and assembly in the field. Multiblade, cast aluminum, adjustable pitch fans with V-belt drive and heavy gage steel casing and basins are incorporated. Interior surfaces are protected with corrosion resistant Marmastic and exterior is painted with zinc chromate primer and aluminum paint. Cold water basin is self-cleaning. Made by **Marley Co.**, 224 W. Gregory Blvd., Kansas City 5, Mo.

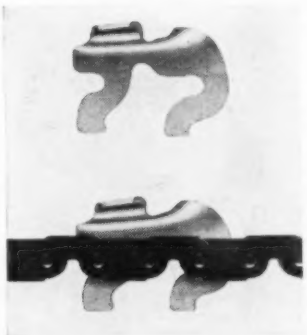
For more details circle **NED-461 A5** on enclosed inquiry slip

PLATFORM STACKING RACK
for unwieldy forgings, castings

Problem of handling unwieldy shaped objects, such as forgings, stampings and castings is simplified by this platform stacking rack. Units have all-steel welded construction with angle iron reinforced legs. Flanged post tops facilitate tiering of individual rack units. Racks are built to required dimensions and capacity by **Palmer-Shile Co.**, 16015 Fullerton St., Detroit 27, Mich.

For more details circle **NED-462 A5** on enclosed inquiry slip

SAW CHAIN
has separate, insertable cutters



Separate, insertable cutters which can be replaced, respaced or removed without tools are featured on Buckeye saw chain. Saw chain need not be discarded when cutters wear out. Cutter position is easily changed for the correct sawing action. Although easily removed when chain is off saw bar, cutters cannot fly out when chain is operating. Cutters are chromium-nickel saw steel, while pin-and-bushing type chain is of special alloys. Chain will accommodate cutters of 0.050, 0.058 and 0.063-in. thickness. Chain sprocket drives simultaneously on four chain plates, reducing wear and eliminating run-off. Made by **Fate-Root-Heath Co.**, Dept. D-6, Plymouth, O.

For more details circle **NED-463 A5** on enclosed inquiry slip

KODAK SIGNET 35 CAMERA—the ideal 35mm. camera for most photographic needs.

Easy-to-use camera for hard-working pictures

You'll find it easier to train . . . to demonstrate . . . to illustrate technical talks . . . and do countless other important jobs with 35mm. slides and prints. Job setups, breakage claims, safety hazards, research results, maintenance data—all can be photographed for study, circulation, and reference. And with a camera small enough to slip into your pocket for use as you walk through the plant.

The Kodak Signet 35 Camera has all the advanced features you need for taking quality industrial photographs. Yet it's as compact and easy to operate as your family snapshot camera. A coupled rangefinder takes the guesswork out of focusing—three simple settings with handy finger-tip controls make accurate operation a snap. Sensibly priced at $87.50, including Fed. Tax.*

WRITE FOR FREE BOOKLET on Kodak Signet 35 Camera.

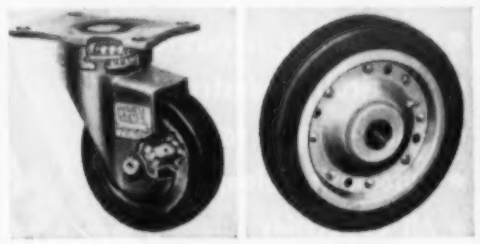
EASTMAN KODAK COMPANY
Rochester 4, N. Y.

**Price quoted is subject to change without notice.*

For more details circle **NED-464 A5** on enclosed inquiry slip

Read these FACTS about

DARNELL CASTERS & WHEELS



STRING GUARDS... Even though string and ravelings may wind around the hub, these string guards insure easy rolling at all times.

RUST-PROOFED... by the Udylite process, Darnell Casters give longer, care-free life wherever water, steam and corroding chemicals are freely used.

RUBBER TREADS... a wide choice of treads suited to all types of floors, including Darnelloprene oil, water and chemical-resistant treads, make Darnell Casters and Wheels highly adapted to rough usage.

LUBRICATION... all swivel and wheel bearings are factory packed with a high quality grease. Zerk fittings are provided for easy lubrication.

Write for Free Darnell Manual

DARNELL CORPORATION, LTD.
DOWNEY (LOS ANGELES COUNTY) CALIFORNIA
60 WALKER STREET, NEW YORK 13, NEW YORK
36 NORTH CLINTON STREET, CHICAGO 6, ILLINOIS

For more details circle **NED-465 A5** on enclosed inquiry slip

Cuts Metal 15 Times Faster than Hand Hack Saw!

New . . . Porter-Cable *Portable* Band Saw only $215.00

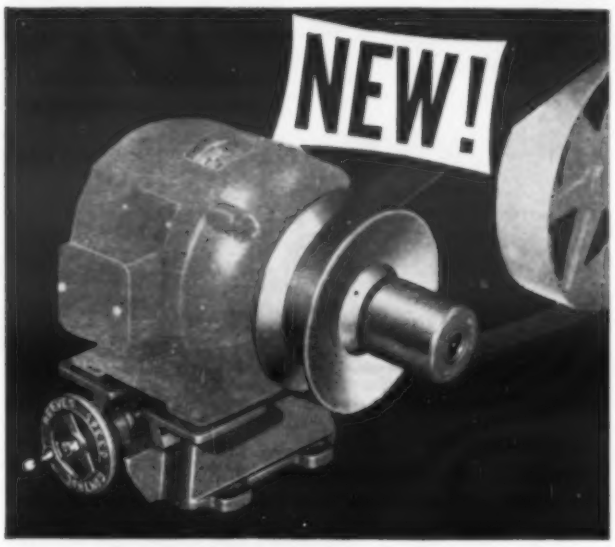
Slices through 1½" cold rolled steel in 41 seconds! That's 15 times faster than a good man with a hack saw . . . *2½ times faster than bulky power hack saws!*

Compact. Weighs only 16 lbs. Easy to handle in any position. Powered for heavy duty. Band speed of 240' per min. insures swift, smooth cutting of all materials up to 3¼" dia. round, or 3¼"x4¼" rectangular. Highest grade precision ball and needle bearings. Universal 115V AC-DC, 25-60 cycle motor (230V available at extra cost).

Write for full information about time-saving application.

PORTER-CABLE MACHINE CO.
2412 N. Salina St., Syracuse 8, N. Y.

For more details circle **NED-466 A5** on enclosed inquiry slip



REEVES *Completely new redesigned* **MOTOR PULLEYS** *Smaller units—More HP!*

Check all these new REEVES features

1. New, smaller disc assemblies—engineered for new or old NEMA Motors.
2. New spiral-groove lubrication for rust-free, trouble-free service.
3. One-point lubrication when unit is stopped *or in operation.*
4. Superior base construction for greater rigidity and strength, reduced vibration and noise.

Write today for complete details. **Specify ND10b-V545.**

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

For more details circle **NED-467 A5** on enclosed inquiry slip

Over 85% of the torque wrenches used in industry are

STURTEVANT TORQUE WRENCHES

Read by Sight, Sound or Feel

- Permanently Accurate
- Practically Indestructible
- Faster—Easier to use
- Automatic Release
- All Capacities

in inch grams ...inch ounces ...inch pounds ...foot pounds

Every manufacturer, design and production man should have this valuable data. Sent upon request.

P.A. STURTEVANT CO. ADDISON QUALITY ILLINOIS

For more details circle **NED-468 A5** on enclosed inquiry slip

AGASTAT

Compact ... Dust-Proof

TIME DELAY RELAYS

solenoid actuated—pneumatically timed

Introduces time delays into a-c or d-c circuits. Easily adjusted to provide delays ranging from 0.1 second to five or more minutes.

The AGASTAT is small, light, and operates in any position. Dust-proof timing chamber assures long operating life with a minimum of maintenance.

AGA DIVISION

Elastic Stop Nut Corporation of America

1027 Newark Avenue, Elizabeth, New Jersey
Dept. A 15-15

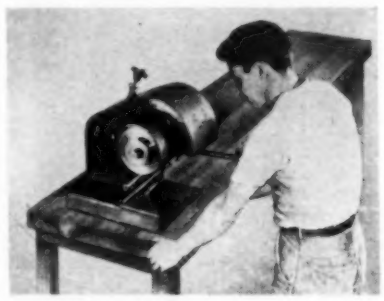
For more details circle **NED-469 A5** on enclosed inquiry slip

WIRE FLATTENING MILL
processes to close tolerances

Round wire is converted to flat wire for such items as flat springs, resistance elements and slide fasteners by this two-stand tandem wire flattening mill. Up to 2500 fpm of narrow strip material is processed to thickness and width tolerances as close as ±0.0001-in. Self-contained machine occupies only 75 sq ft of floor space. It is comprised of two mill stands and a traversing recoiler mounted in tandem with a dancer roll system to maintain constant wire tension. Ferrous and nonferrous wire produced ranges in thickness from 0.001-in. to 3/16-in. and in width from 1/64 to 3/8-in. Made by **Stanat Mfg. Co.,** 47-30 37th St., Long Island City 1, N. Y.

For more details circle **NED-470 A5** on enclosed inquiry slip

CUTOFF MACHINE
cuts 3/8 to 1 1/4-in. pipe and tube



Up to 1000 pieces of 1/4-in. OD pipe per hour can be cut on this bench type pipe and tube cutoff machine. It will cut all sizes from 3/8 to 1 1/4-in. OD pipe and tube from light gage to 12-gage wall thickness. The 7-in. tempered cutting wheel is driven by a 1/4-hp gearhead motor. Adjustable depth regulator limits downward cutting stroke, protecting wheel and rollers. Machine also has adjustable stop and length gage. Made by **Continental Machine Co.,** 1954 N. Maud Ave., Chicago 14, Ill.

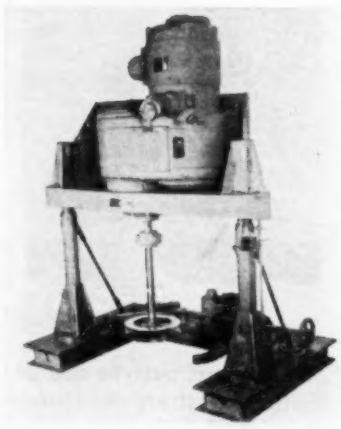
For more details circle **NED-471 A5** on enclosed inquiry slip

ABRASION RESISTANCE TESTER
portable unit simulates actual wear

Most of the tests to evaluate the resistance of surfaces to rubbing abrasion possible with standard laboratory model Taber Abraser can be conducted on this model 140PT portable abrasion resistance tester. Actual wear conditions can be simulated for paper, cardboard, rubber, upholstery, leather, paint, metals, porcelain and all types of fabrics. Results are easily read and minimum technical experience is necessary to operate. Tester is offered with vacuum unit to remove all abrasion particles and variety of holders for different types of materials. Made by **Taber Instrument Corp.,** Section 16, 111 Goundry St., North Tonawanda, N. Y.

For more details circle **NED-472 A5** on enclosed inquiry slip

VISCOUS MATERIAL MIXER
5 to 15-hp sizes available



Inks, paints, chemicals and other materials with a viscosity of up to 40,000 centipoise can be rapidly mixed and dispersed by this change can mixer. It is available in 5 to 15-hp sizes to handle tubs or cans up to 42-in. diameter. The 15-in. diameter shrouded turbine is driven at speeds variable from 320 to 640 rpm. Entire mixing mechanism is raised or lowered electrically by gearhead motor for quick changing of cans. Tub clamps lined with brake lining are operated by small handwheel. Made by **Stevenson Co.,** Dept. N, 228 N. Wilkinson St., Dayton, O.

For more details circle **NED-473 A5** on enclosed inquiry slip

with EMPCO leveling jacks

MACHINES PERFORM BETTER!

Set your machines level—and keep them that way! That's the key to better performance and less maintenance! EMPCO Leveling Jacks provide a solid, adjustable support for machine tools, industrial furnaces, tool room and production equipment of all types. Easily installed and relocated, EMPCO Jacks keep your machines level and stable.

VI-SORB mounting pads are optional with EMPCO Jacks. They control vibration from within the machine itself, and reduce transmitted vibrations.

Available in two styles and 6 models, there's an EMPCO Jack for your every requirement. Write today for complete information and illustrated bulletin!

EMPCO PRODUCTS

THE ENTERPRISE MACHINE PARTS CORPORATION
2727 JEROME AVENUE • DETROIT 12, MICHIGAN

For more details circle **NED-474 A5** on enclosed inquiry slip

Economical Choice

FOR REGULATING STEAM PRESSURES

MASONEILAN

500 Series

Economical choice for regulating pump pressures or reducing saturated steam pressures for heating systems and process work. Accurate—easily adjusted . . . responds instantly to variations. Simple, sturdy construction gives unusually long life, requires little maintenance.

Single or double seated types. Initial pressures up to 250 psi; controlled pressures between 3/4 and 160 psi.

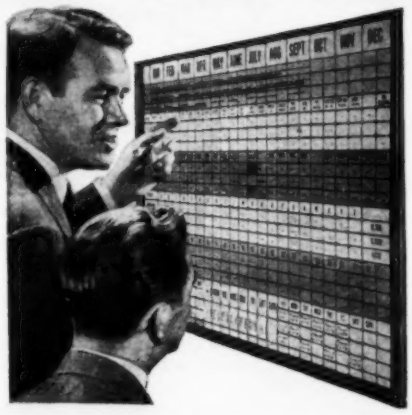
NO. 515

Call your local Mason-Neilan Industrial Distributor for fast, dependable service.

MASON-NEILAN REGULATOR CO.
1189 ADAMS ST., BOSTON 24, MASS., U. S. A.

For more details circle **NED-475 A5** on enclosed inquiry slip

GRAPHIC VISUAL CONTROL



THE BOARDMASTER SYSTEM

- ★ Graphic Picture of Your Operations—Spotlighted by Color
- ★ Facts at a Glance—Saves Time and Eliminates Confusion
- ★ Simple and Flexible—Easily Adapted to Your Operations
- ★ Easy to Operate—Type or Write on Cards, Snap on Board
- ★ Ideal for Production, Scheduling, Inventory, Traffic, Etc.
- ★ Compact, Attractive. Made of Metal. Over 50,000 in use.

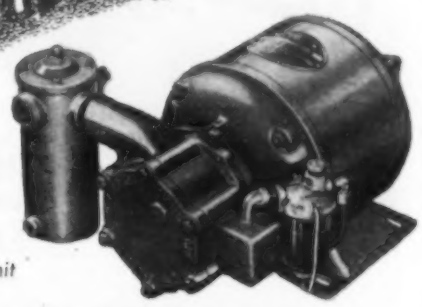
Complete Price $49.50 Including Cards

FREE 24-Page ILLUSTRATED BOOKLET N-100 Without Obligation

GRAPHIC SYSTEMS, 55 West 42nd St., New York 36

For more details circle **NED-476 A5** on enclosed inquiry slip

MOTOAIR VACUUM PUMP



COMPACT!

motor and pump in ONE integral unit

Extremely compact design makes Motoair ideal for any machines where sustained or intermittent vacuum is required—also for Laboratory work. Visible, automatic, circulating lubricating system. Made in several sizes.

823. Send for Catalog details . .

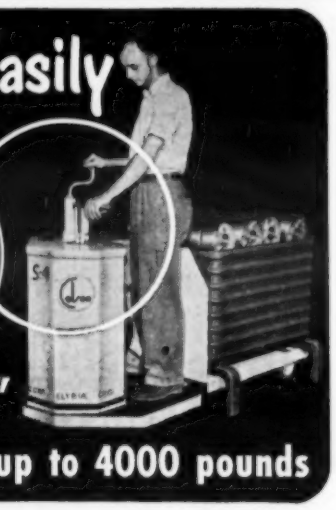
NEW JERSEY MACHINE Corporation

FACTORY SALES AND SERVICE BRANCHES CHICAGO CINCINNATI LOS ANGELES

1550 WILLOW AVENUE, HOBOKEN, N. J.

For more details circle NED-477 A5 on enclosed inquiry slip

Look How Easily The Colson "HANDLER" Handles Loads up to 4000 pounds



The "Handler" is the first proved-in-service gasoline powered Lift Truck with hydraulic drive and hydraulic control. *Just one lever does all the work—shifts, lifts and brakes.* 2 speeds forward, 2 speeds backward. Instantaneous reversing. Rider has complete visibility at all times, and "dead man" brakes are an extra safety factor.

6 H. P. gas engine provides plenty of power for rugged round-the-clock operation.

Write today for descriptive folder.

THE COLSON CORPORATION

Elyria, Ohio

CASTERS • HAND TRUCKS • LIFT JACK SYSTEMS

Hydraulic, Electric and Mechanical Power Lifts and Transports

For more details circle NED-478 A5 on enclosed inquiry slip

Cut Costs WHEN CUTTING WOOD OR PLASTICS

MEYCO

CARBIDE TIPPED CIRCULAR SAWS ARE ENGINEERED FOR TUNGSTEN CARBIDE

MEYCO carbide tipped saws are in a class by themselves, because the blades have been engineered for the addition of the carbide cutting teeth. It is this engineering know-how of building a carbide tipped saw from the ground up, that has made the MEYCO circular saws unique . . . that has accounted for repeat orders and a customer satisfaction of which we are justly proud.

VIBRA-FREE*

THE NEWEST THING IN CIRCULAR SAWS

Vibra-Free* dampers make it possible to distribute the stresses and strains inherent in every blade MORE EVENLY, thus producing an even better carbide tipped saw than has been possible heretofore. Vibra-Free* dampers absorb the sound waves set up by the motion of the saw, thus doing away with the objectionable, high-pitched whine, plus the rough cut produced by vibration.

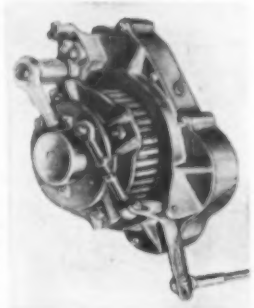
WRITE FOR CATALOG NO. 29

*T. M. Reg. U. S. Pat. Off.

W. F. MEYERS CO., INC., BEDFORD, INDIANA

For more details circle NED-479 A5 on enclosed inquiry slip

ELECTRO-MECHANICAL GOVERNOR
controls speed of generators



Two main functions of this Dupy load-sensitive electro-mechanical governor for gasoline or diesel-driven generators are to control frequency of an engine-driven alternating current alternator and to regulate voltage of a direct current machine. Both are accomplished by controlling speed of prime mover. Rotor is only moving element. Governor is normally driven from engine timing shaft through spur gears which reduce speed of rotating element to 150 rpm. On alternating current it holds frequency to $\pm\frac{1}{2}$ per cent; on direct current it holds voltage to ± 1 per cent. Overall system response is about 2 seconds, dependent on engine condition. Adapter pads fit unit to any type gasoline or diesel engine. Made by **Leach Corp.**, Inet Div., 4443 Santa Fe Ave., Los Angeles 58, Calif.

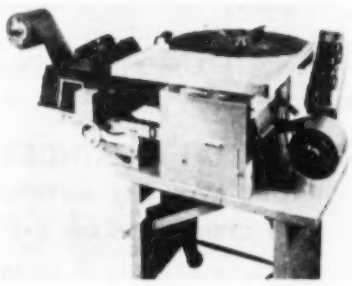
For more details circle NED-480 A5 on enclosed inquiry slip

SIPHON & HAND PUMP
handles wide variety of liquids

Bulb and tubing of this siphon and hand pump are made of synthetic rubber, while check valves are plastic. Pump action starts siphon and easily pumps or siphons liquids from one container to another without spilling or splashing. Unit is unaffected by most inorganic solutions, mineral and animal oils and low concentrations of alcohol, paraffinic and clefinic hydrocarbons, amines, alkyl monohalides and esters containing more than ten carbon atoms. Total length of the $3.00 unit is 5 ft. Made by **General Scientific Equipment Co.**, 2701 W. Huntingdon St., Philadelphia 32, Pa.

For more details circle NED-481 A5 on enclosed inquiry slip

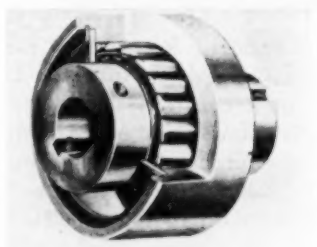
PACKAGING MACHINE
wraps, seals package every second



Wide range of consumer and industrial items of many different sizes and shapes can be packaged with this Auto-Pak machine. Unit plugs into any line capable of handling 30 amp. It forms two sheets of heat-sealing material around items to be packaged, seals the four sides, cuts off and delivers completed package at rate of one every second. Machine will make a heat sealed package using special materials such as 50 lb wet strength, creped-kraft coated with 5-mil polyethylene. Special attachments are available for automatic feeding, counting, coding and printing. Made by **Pak-Rapid, Inc.**, Dept. N, 530 N. 21st St., Philadelphia 30, Pa.

For more details circle NED-482 A5 on enclosed inquiry slip

CAM CLUTCHES
for indexing, overrunning, backstop



Indexing, overrunning and backstop functions can be served by PB series of plain bearing cam clutches. Units are used in conjunction with standard shafting on press feeds, two-speed drives and as backstop and overrunning clutches in machine drives. They have long bronze bearing, hardened and ground steel inner and outer races, full complement cam and energizing spring assembly, a snap ring and a grease fitting. Seven standard sizes range from 2-in. OD by 2 in. long to $5\frac{1}{4}$-in. OD by $4\frac{3}{8}$ in. long. Smallest is rated 8.2 lb-ft, indexing; 16 lb-ft, general duty; and 23 lb-ft, backstop. Largest is rated 45, 1075 and 1584 lb-ft for the same functions. Made by **Morse Chain Co.**, Dept. ND, 7601 Central Ave., Detroit 10, Mich.

For more details circle NED-483 A5 on enclosed inquiry slip

NEW! Speedy

1 TON Heavy Duty AIR PRESS No. 80 only $85

★ Heavy grey iron casting, accurately machined surfaces.

★ Power factor—15 times air line pressure of 5 to 150 lbs.

★ Throat clearance to center of 10" diam. circle.

★ Ram clearance 0 to 5", stroke 5/8", table 5" x 5".

This useful, high quality No. 80 SPEEDY AIR PRESS is the last word in air power engineering—the result of 34 years of specialization in diaphragm compression. Extremely sturdy, it does dozens of jobs formerly handled by expensive presses—and does them more quickly, easily and economically. Operated by Speedy Foot Control, Hand, or Fingertip Valves. Order from your supplier or write direct.

Write for New Catalog of Speedy Air Tools and Accessories

W. R. BROWN CORP., 2647 N. Normandy Ave., Chicago 35

AIR TOOLS • AIR VISES • AIR REGULATORS • FILTERS • COMPRESSORS

For more details circle NED-484 A5 on enclosed inquiry slip

PAGES 86-90...

in your HANDY pocket-size Abart CATALOG specifications, diagrams and performance data on Abart Gearmotors—right angle type: 1/6 to 5 hp. . . . ratios 5-4/5 to 1 up to 100 to 1 . . . output speeds from 17.5 to 302.0 rpm.

Your copy is free upon request—write today!

There's an efficient, compact Abart Gearmotor to fit your particular needs.

ABART GEAR and MACHINE CO.

4826 WEST 16th STREET • CHICAGO 50, ILLINOIS

Also Mfrs. of Gears and Speed Reducers

For more details circle NED-485 A5 on enclosed inquiry slip

WATER-PICK-UP with SPENCER HARTFORD VACUUM

Any Spencer Vacuum System will pick up liquids—after scrubbing, accidental spillage or floods and from sump tanks. For large volume pick up, special collector tanks from 6 to 100 gallons capacity or liquids may be discharged direct to the sewer.

Spencer also picks up hot materials, reclaims metals and of course will clean large industrial areas and your offices in a remarkably short time. Bulletin on request.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT

SPENCER HARTFORD

466-P

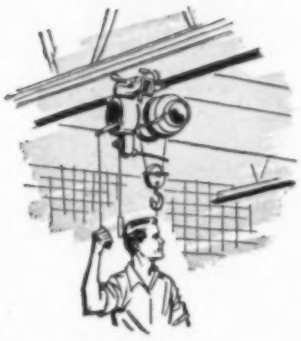
For more details circle NED-486 A5 on enclosed inquiry slip

COBURN

OVERHEAD CONVEYING EQUIPMENT

Save money... Install it yourself.

Here are the simple ABC's of Coburn's easy and inexpensive installation.



(A) Our engineers make a study of your particular plant layout.

(B) Easy-to-follow plans are then submitted.

(C) These plans, plus Coburn's simplicity of parts and design enable your own plant personnel to set up your overhead conveying system quickly and economically.

Write for Catalog #220 to Coburn Sales and Engineering, 56 Sterling Street, Clinton, Mass.

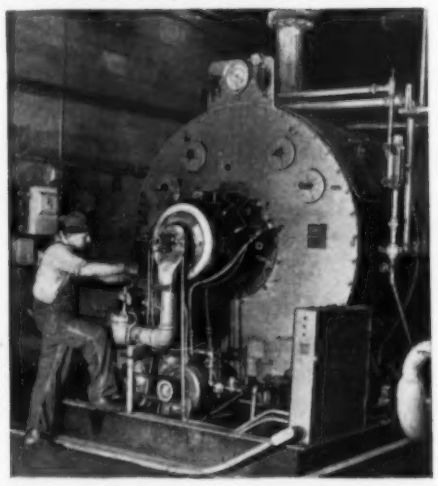
2598

COBURN PRODUCTS

PRODUCTS OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

▲ For more details circle **NED-487 A5** on enclosed inquiry slip ▲

Steam Costs Go DOWN where *Powermasters* Go In



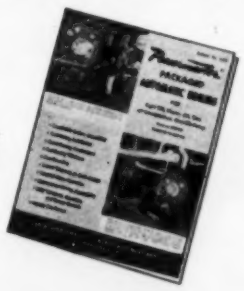
For Example:

A Mid-West meat packing plant added this 250 hp. gas-fired *Powermaster* Packaged Automatic Boiler in its boiler room after experiencing complete satisfaction with a 150 hp. *Powermaster* for several years. From their simplified installation to their long, dependable performance, *Powermasters* really save you money. High fuel economy at all loads, time-saving attention, maintenance-saving accessibility, automatic operating and safety controls, smokeless combustion and hospital-clean operation are a few of the many cost-saving advantages you get with *Powermaster* units.

Have You Checked Your Steam Costs Lately?

Many kinds of industrial plants, food processors, schools, institutions, public buildings, laundries, housing projects and utilities are also enjoying the cost-saving advantages of *Powermaster* boilers.

Get this NEW Bulletin that will enable you to compare *Powermaster's* cost-saving features with any other boiler. Get this proof that *Powermaster* is your best buy.



O&S *Powermaster*®

PACKAGED AUTOMATIC BOILERS

Sizes to 500 HP; pressures to 250 psi.

ORR & SEMBOWER, INC.

Morgantown Road, Reading, Pa.

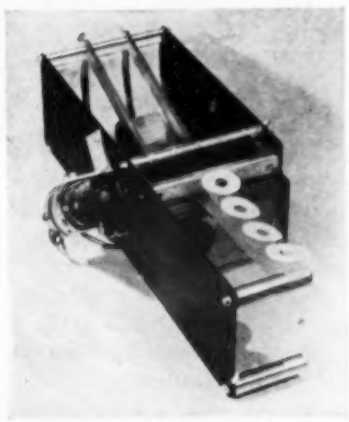
▲ For more details circle **NED-488 A5** on enclosed inquiry slip ▲

ELECTRIC DRUM HEATER
woven unit fits on drum surface

Alloy resistance wire insulated with fibrous glass, used in construction of this woven electric heater, enables it to withstand continuous 450° F sheath temperatures. Wax, grease, oil and other viscous liquids packaged in 55-gal drums are quickly melted or thinned by the heater which snaps on to form a snug contact with the drum surface. Teflon-insulated elements are available for heating acid or alkali compounds where spillage is a problem. Heater sections are wired together in pairs to fit between rings or chimes. Ratings of 1500 or 3000 w on 115 v or 3000 w on 230 v are available. Special units can be fabricated. Made by **Pre-Fab Heater Co.**, Guilford, Conn.

▲ For more details circle **NED-489 A5** on enclosed inquiry slip ▲

DIE CUT MASKS & DISPENSER
masks offered in roll form

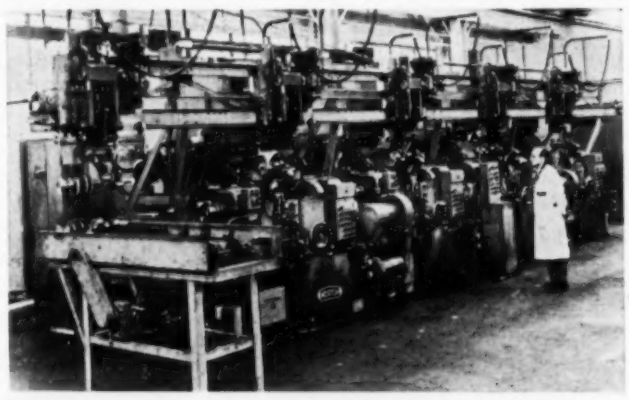


Pressure sensitive die cut masks and shapes processed in roll form with split backing, plus model PAM 10 motor driven dispensers afford continuous flow of labels to keep up with productive capacity of user. Dispenser strips away one section of roll liner leaving die cut unit holding on other section. This allows quick removal by operators. Dispenser feeding is controlled. Practically any type pressure-sensitive tape can be handled in this fashion. Procedure is also available for double coated tapes which are offered with a split backing and tab type liner on reverse side. Developed by **Transparent Products Co.**, Dept. N-2, 324 E. 24th St., New York 10, N. Y.

▲ For more details circle **NED-490 A5** on enclosed inquiry slip ▲

CRANKSHAFT GRINDER
four stations automatically grind all crankpins on V-8 engine shafts

Crankpins on from 45 to 60 V-8 crankshafts can be ground in one hour on the Norton TTCG transfer type crankpin grinder. Speed depends upon crank-



shaft design and processing details. Four 25-hp direct current variable speed motors drive four 42-in. crankshaft grinding wheels at a constant peripheral speed. Two 5-hp motors drive four work heads, two 3-hp motors drive hydraulic equipment, four ½-hp alternating current dynamic braking motors are used in the transfer system, and four oil motors position workheads for loading.

Lifting hooks roughly locate shafts in correct angular position while being carried between stations. Lubrication is automatic, as is wheel truing which can be actuated at each cycle or at any preset number of cycles. Machine automatically compensates for wheel wear. Automatic size control of work is by air snap gages. Crankshafts are picked up from conveyor at left and transferred automatically through each of four grinding stations before being placed on another conveyor at the far end. Made by **Norton Co.**, 200 New Bond St., Worcester 6, Mass.

▲ For more details circle **NED-491 A5** on enclosed inquiry slip ▲

SIMPLIFY handling of corrosive chemicals

OFFERS MANY ADVANTAGES OVER MECHANICAL PUMPS . . .

Low initial cost with practically no maintenance and noiseless efficiency for long operating periods makes Penberthy ejectors worth investigating. Model shown, of inert USCOLITE*, is hydraulically operated for liquid transfer, mixing and blending, pumping gases, removing gas or vapor, aerating liquids. Catalog 512 shows complete line. Engineering service available. Write for facts.

PENBERTHY INJECTOR COMPANY
Division of THE BUFFALO-ECLIPSE CORPORATION
1242 Holden Avenue Detroit 2, Michigan

There's Certain Satisfaction in PENBERTHY **products**

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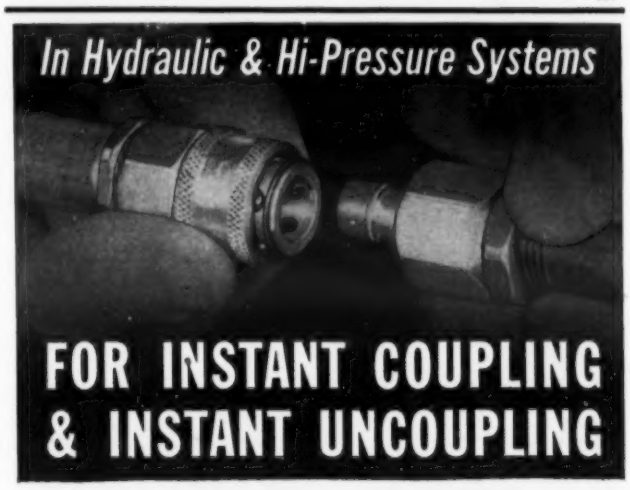
In Hydraulic & Hi-Pressure Systems



FOR INSTANT COUPLING & INSTANT UNCOUPLING

SNAP-TITE'S NEW H COUPLING—
The Smallest Coupling, Size for Size, with Higher Efficiency and Highest Strength

Approved for: Maximum Flow • Minimum Maintenance • Positive Seal • Resistance to Heavy Line Surge—Valves Cannot Float

Available in sizes 1/8" to 10" of alloy steel, stainless steel, or to specification

SNAP-TITE COUPLINGS CAN HANDLE ALMOST ANYTHING THAT FLOWS

See Snap-tite's representative or write for Bulletin 240

Snap-tite, INC.
UNION CITY, PENNSYLVANIA

▲ For more details circle **NED-493 A5** on enclosed inquiry slip ▲

Turns in 6½ ft. radius in box car or gondola

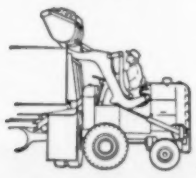
Rear steering wheels of the Auto-Scoop make shortest turn (5" shorter than other scoop loaders with bucket in carry position). Auto-Scoop also travels up to 25% faster (to 13.88 mph in reverse, 7.66 forward) — shortens time on every trip. Single lever provides split-second forward-reverse shift. Many other advantages that bring production gains, cut costs. Write for Catalog L12-4.

20% more lifting capacity (1200 lbs.).

JAEGER LOAD-PLUS
auto-scoop
12 cu. ft.

1 cu. yd. Load-Plus available for bigger work.

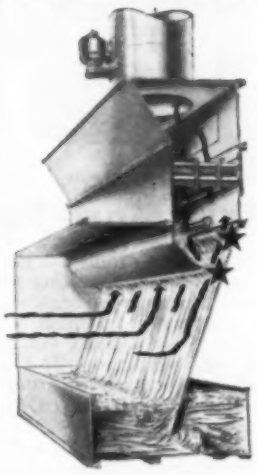
THE JAEGER MACHINE COMPANY
615 Dublin Avenue—Columbus 16, Ohio



Higher clearance (6'8"), more reach (2'7").

▲ For more details circle **NED-494 A5** on enclosed inquiry slip ▲

NEW LOW-COST WATER WASH SPRAY BOOTH



This completely new Binks Style D water wash spray booth will save many dollars for shops interested in lower costs. It costs less to buy, less to operate and less to maintain. A vigorous double washing (see ★★) scrubs overspray from the exhaust air and collects it for reclamation or disposal. Booth and fan stay cleaner longer. The manifold is clog-proof. All parts are easily accessible.

SEND NOW FOR FURTHER INFORMATION

Binks Manufacturing Company
3122-34 West Carroll Avenue, Chicago 12, Ill.

Binks EVERYTHING FOR SPRAY PAINTING

GUNS • COMPRESSORS • EXTRACTORS & ACCESSORIES

REPRESENTATIVES IN PRINCIPAL U. S. & CANADIAN CITIES • SEE YOUR CLASSIFIED DIRECTORY

▲ For more details circle NED-495 A5 on enclosed inquiry slip ▲

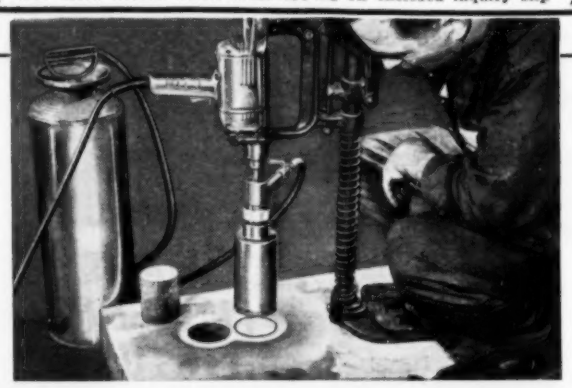
UNIVERSAL DRILL BUSHINGS

Industry's standard of quality and service

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 5, MICHIGAN

189-A

▲ For more details circle NED-496 A5 on enclosed inquiry slip ▲



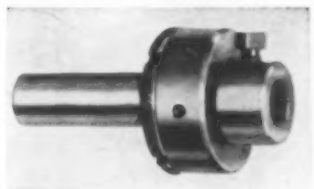
Only 90 seconds to drill 3½" holes through 4" concrete slab with TRUCO WATER SWIVEL and TRUCO SWIVEL DIAMOND DRILL BITS

This combination can drill at high speed in hardest aggregates with only 150 lbs. pressure and ½" H.D. motor as against 1,000 lbs. pressure and 1"-1¼" H.D. motor specified for other tools. Truco combination can drill *reinforced concrete;* amazing drilling speed in brick, granite, ceramic tile, marble. Truco Water Swivel and Truco Swivel Diamond Bits can easily pay for themselves on your first job. Write for folder:

WHEEL TRUEING TOOL COMPANY
55-3200 West Davison Avenue • Detroit 38, Michigan

▲ For more details circle NED-497 A5 on enclosed inquiry slip ▲

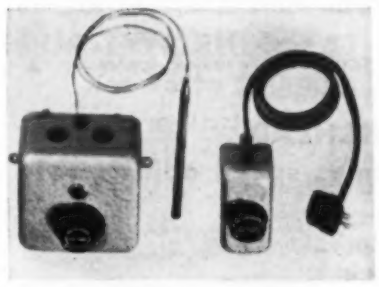
REAMER HOLDER
has spring parallel alignment



A free-floating positive drive that maintains axis of reamer parallel to centerline of hole is incorporated in this reamer holder. Parallel alignment feature is accomplished with spring arrangement that is easily adjusted for tension to compensate for overhanging weight of various sizes of reamers. Holder will start reamers without chatter and will insure against out-of-round holes during large or small production runs. Its construction also absorbs initial tool shock to minimize breakage. Made by **Marcellus Mfg. Co.,** Dept. M-2, Belvidere, Ill.

▲ For more details circle NED-498 A5 on enclosed inquiry slip ▲

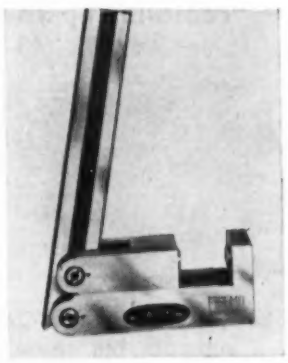
HEATING TAPE THERMOSTATS
two heavy duty, one light duty



Heavy duty model 453 and model 453A thermostats for use with Ribbon Heat and similar heating tapes are designed for permanent installation and have adjustable temperature ranges of 30 to 90° F and 50 to 250° F, respectively. Lowest temperature unit is used with tapes to prevent freeze-up of water lines, sprinkler systems and for space heaters. Other heavy duty unit is used to keep viscous liquids and bunker C oil free-flowing and for controlling temperature of water heaters and electric ovens. Thermostats are rated at 22 amp on 110 or 220 v dc and have a pilot light. Model 544 light duty thermostat is for use on plug-in model Ribbon Heat tapes. It is rated at 10 amp on 110-120 v ac and also has pilot light. Made by **Cox & Co.,** 16 E. 43rd St., New York 17, N. Y.

▲ For more details circle NED-499 A5 on enclosed inquiry slip ▲

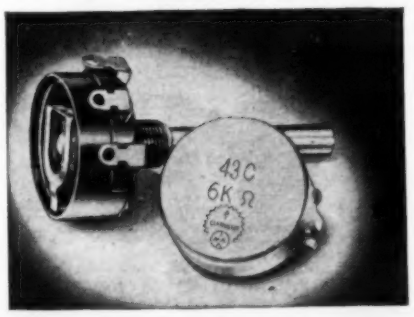
ANGLE GAGE
makes setups to 1 minute of arc



Base, slide that moves along the base and an angle bar comprise the Gemo Bevelgauge, an instrument for making and checking angular setups within ±1 minute of arc (0.017-degrees). Angular setting of bar is determined by position of slide along the base and slide position is governed by gage blocks placed between facing anvils on slide and base. A 7-in. straight angle bar for angles from 45 to 135 degrees and a 4-in. dog-leg bar with 45-degree angle, for angles from 0 to 45 degrees and 135 to 180 degrees, are furnished. Made by **Cleveland Instrument Co.,** 735-A Carnegie Ave., Cleveland 15, O.

▲ For more details circle NED-500 A5 on enclosed inquiry slip ▲

WIRE-WOUND CONTROLS
size reduced, wiper arm improved



Reduction of diameter from 1 21/32 to 1⅛ in. and an improved wiper arm that contacts the edge rather than side of resistance winding are design changes incorporated in series 43c wire-wound controls. This contact allows higher resolution, more intricate tapers and closer tolerances in overall resistance and linearity. Terminals are fastened directly to winding, and collector and terminals are now in one piece. Stop is integral with base instead of in cover. Standard ohmages from 1 to 50 k, with electrical tolerance of ±5 per cent and independent linearity to ±2 per cent are offered. Controls are rated at 2 w. Made by **Clarostat Mfg. Co.,** Washington St., Dover, N. H.

▲ For more details circle NED-501 A5 on enclosed inquiry slip ▲

New "PULL-GEAR" SPEED-REDUCING PULLEY
Increases Drill Press Capacity

NEW MODEL

Provides Correct Speed and Power to Drill Up to 1⅜" with ½ H.P. Motor

Amazing new internally geared speed reducer doubles drill press capacity. Greater power, greater efficiency, greater productivity.

Provides the correct speed and power for larger drilling, reaming, tapping and boring on light presses. Easily installed in five minutes. Adaptable to all type machines. Spindle speed range approx. 45 to 3000 RPM. Made in 3 motor shaft sizes: ½"-⅝"-¾". Write for literature.

Some Territories Open to Jobbers

THE PULL-GEAR CO.
25425 Mound Rd. Centerline, Mich.

WRITE FOR LITERATURE

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See us at Booth 619, Plant Maintenance show, Jan. 24-26, Chicago.

Why do most users prefer and buy the genuine RIDGID PIPE WRENCH?

It's easiest to work with... perfect balance...comfort-grip I-beam handle...handy pipe scale on hookjaw...easy-spinning adjusting nut... clean grip on pipe, no slip or lock.

It lasts longer... first guaranteed housing, won't break or bind ... ever. Every wrench individually tested before shipment ... and millions of them in use. Sizes 6" to 60"—end pattern, 6" to 36".

For the most for your money, buy RIDGID ... Your local Supply House stocks them for you, delivers them fast!

THE RIDGE TOOL COMPANY • ELYRIA, OHIO, U.S.A.

RIDGID Work-Saver Pipe Tools

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(PAT. PEND.)

LINDGREN DOORS

HOLD THE KEY TO BETTER SCREEN ROOM PERFORMANCE

Yes . . . Lindgren Custom Doors are GUARANTEED to Increase Efficiency of Your Present Screen Rooms!

More than just materials and labor are needed to build the *right* door for a screen room . . . it takes the "know-how" and experience in design and construction that has been synonymous with Lindgren for over 20 years. With a Lindgren custom door, built to your exact specifications, there is no chance of "leakage" . . . you get GUARANTEED better performance —or your money back!

WRITE TODAY FOR FULL DETAILS— PLEASE INCLUDE YOUR SPECIFICATIONS

ERIK A. Lindgren & ASSOCIATES Est. 1939
4515-17 Ravenswood, Dept. NI, Chicago 40, Ill. SU 4-0710

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B.F.Goodrich

TW ANALYSIS solves costly tire problem for Aluminum Smelting Company

Cutting and chipping, caused by oil and aluminum scrap, created a problem for Aluminum Smelting Company. The B. F. Goodrich Tire and Wheel Analysis man solved this problem.

CUTTING and chipping of industrial tires, caused by aluminum scrap and oil, created a serious and expensive problem for Aluminum Smelting Company of Cleveland. The tires on this company's fleet of 11 industrial trucks were being "chewed to pieces" after only a week or two of service.

The local B. F. Goodrich Tire and Wheel Analysis man was asked to make a study of the problem. As a result of his findings, BFG Pressed-On Deluxe Cushion tires were installed on all of the trucks. BFG's All-Purpose compounding provided resistance against oil, cutting and chipping.

Here's what Mr. Steve Robusky, Maintenance Superintendent of Aluminum Smelting, has to report—"These BFG tires have helped us eliminate cutting and chipping. Damage from oil has been eliminated almost completely. We have realized substantial savings in tire costs and maintenance expense."

FREE TW ANALYSIS CAN SOLVE YOUR PROBLEM

Just contact your local B. F. Goodrich retailer or mail the coupon below. Without cost or obligation, a trained BFG man will study your materials handling operations. His recommendations can help you cut industrial tire costs . . . reduce maintenance expense. The advice you receive will be unbiased, for B. F. Goodrich makes a *complete* line of industrial tires for every type of service. A special TW Analysis is available for manufacturers of industrial equipment.

The B. F. Goodrich Company
Tire & Equipment Division
Department TW-461, Akron 18, Ohio
Please send me:
☐ Additional information on your Tire and Wheel Analysis Plan
☐ Free copy of "Industrial Tire Guidebook"
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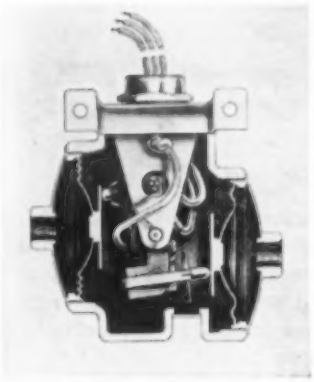
Name_____
Company_____
Street_____
City_____ Zone____ State____

Specify B. F. Goodrich tires when ordering new equipment

B.F.Goodrich — RESEARCH KEEPS FIRST IN RUBBER

▲ For more details circle **NED-505 A5** on enclosed inquiry slip ▲

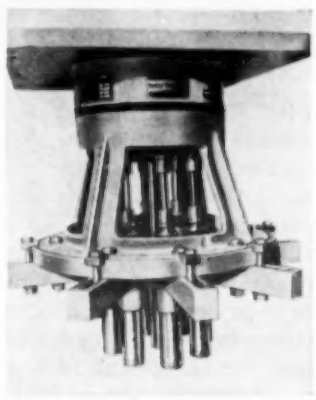
PRESSURE DIFFERENTIAL SWITCH protects sensitive instruments



Pressure differential from 0 to 99 psi is accurately sensed by Meletron model 462 diaphragm switch between two pressures within its working range of 0.05 to 100 psi. Unit will actuate an electric circuit on increase or decrease of predetermined pressure differential within range of switch selected. Differential is adjusted by ratchet. Switch operates in any position without need for balancing or leveling and is unaffected by jarring or vibration. Snap-action, single-pole, double-throw switching element rated for alternating and direct current circuits will operate relays, solenoids, motor controls and similar devices. Made by **Barksdale Valves,** Dept. NED, 5125 Alcoa Ave., Los Angeles 58, Calif.

▲ For more details circle **NED-506 A5** on enclosed inquiry slip ▲

ADJUSTABLE DRILLHEAD improved clamps speed adjustment



Spindle bracket clamping device for use with Thriftmaster nine-spindle universal joint-type adjustable drillhead makes use of spindle locating and locking templates optional. Device consists of two clamping bolts per adjusting bracket. It provides the support required for drilling ¾-in. holes in cast iron, which is capacity for the heavy duty drillhead. Made by **Thriftmaster Products Corp.,** 1010A N. Plum St., Lancaster, Pa.

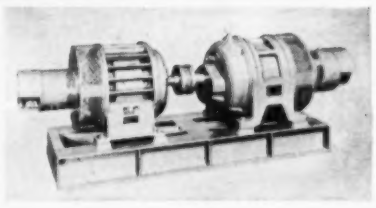
▲ For more details circle **NED-507 A5** on enclosed inquiry slip ▲

PUNCH CARD RECONDITIONER reclaims up to 83 per cent of cards

Damaged punch cards that will not go through tabulating-sorting machines are reconditioned by the Carditioner. Series of knurling and ironing rollers irons out folded, crumpled and dog-eared cards and sorts out in a separate bin those damaged beyond repair or bearing paper clips, staples, documentary stamps and mending tape. Up to 83 per cent of unusable cards are reclaimed. Cards are run through the machine at rate of 275 per minute and come-out restored, stacked and ready for tabulating and sorting. Made by **Cummins-Chicago Corp.,** Cummins Business Machines Div., 4770 N. Ravenswood Ave., Chicago 40, Ill.

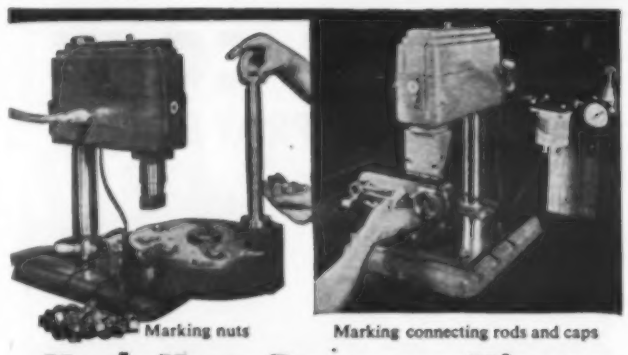
▲ For more details circle **NED-508 A5** on enclosed inquiry slip ▲

HIGH FREQUENCY GENERATORS with outputs from 3 to 2000 cycles



High frequency generators rated at 1 to 100 kva single phase or polyphase are available with outputs from 3 to 2000 cycles. Voltage can be regulated to within ±½ per cent by addition of magnetic amplifier type regulators. High quality wave form can be maintained with less than 1 per cent deviation. Generators can be synchronous motor, induction motor or direct current motor driven. By use of constant speed motor with variable speed drive, wide range of frequencies can be provided. Uses for generators are testing electronic equipment, operating high speed tools and high frequency motors, as marine and aircraft power supplies and as laboratory power supply. Made by **Hertner Electric Co.,** 12712 Elmwood Ave., Cleveland 11, O.

▲ For more details circle **NED-509 A5** on enclosed inquiry slip ▲


Marking nuts — Marking connecting rods and caps

Mark More Parts per Minute

Whether your problem is the marking of nuts, bolts, connecting rods, axles, pots and pans or the branding of screw drivers, pencils, baseballs or ammunition belts—it will pay you to investigate the Automark. This automatic high-speed pneumatic marking machine needs no special jigs or fixtures for average work. Where holding devices are required several standard automatic fixtures are available. We'll gladly design and build special equipment. Write for Bulletin 712.

NEW Electric Typewriter marks metal name plates in one-fifth the time.

AUTOMARK
Automatic Marking MACHINE
Manufactured Exclusively By

AGENTS
Desirable territories open for responsible representatives. Write giving complete information, lines carried and territory covered.

DEFIANCE MACHINE & TOOL COMPANY
1928 South Vandeventer Ave. • St. Louis 10, Mo.

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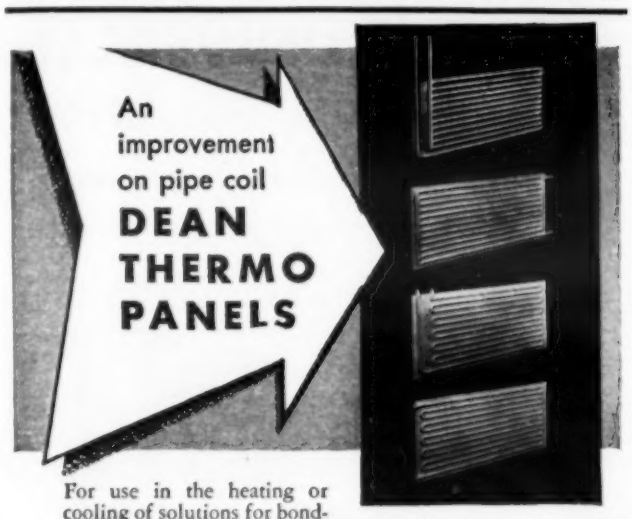

For use in the heating or cooling of solutions for bonderizing, metal washing, degreasing, plating, etc. Low in first cost . . . light weight . . . space-saving . . . do away with expensive pipe coiling . . . provide efficient heat transfer.

Available in special shapes such as "U"s, "L"s, and cylinders . . . and in a wide range of materials, including iron, stainless steel, Monel and other special alloys.

Send for FREE bulletin giving facts and prices. **Dept. NE 1**

Manufacturers Representatives Wanted.
Write for details. Choice territories now open.

THERMO-PANEL DIVISION
DEAN PRODUCTS, INC. • 616 Franklin Ave., Brooklyn 38, N. Y.
STerling 9-5400

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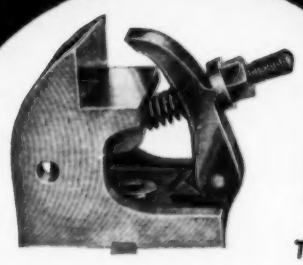
CUT SET-UP COSTS HUNDREDS OF WAYS WITH



HART MILLING FIXTURES

"Masters of A Thousand Set-ups"

Eliminate the need for many special expensive jigs and fixtures.

You will save time and money on most set-ups with Hart Milling Fixtures. They hold round, hexagonal, octagonal or square stock, for miller, shaper, drill press and tapper; they reduce set-up time and speed production. Hart Milling Fixtures are made in four useful sizes, and designed to be used in horizontal or vertical position. Let us send you full description and prices.

Write for illustrated folder

WALTER W. FIELD & SON, INC.
39 Hayward St., Cambridge 42, Mass.

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RAPID Set-Ups

. . . with extreme accuracy — every time and on the first try!

BROOKFIELD TOOL HOLDER

In Essence: A Floating Precision Vise

No More Fussing With Bushings! | **Just Slip Tool In Jaw and Tighten!** | **Run-out Is Less Than .0001/Inch!**

One Brookfield Tool Holder = One Conventional Tool Holder + Stock of at least 100 Bushings *and* makes SET-UP TIME AND ALIGNMENT ACCURACY what they can be under the most ideal conditions.

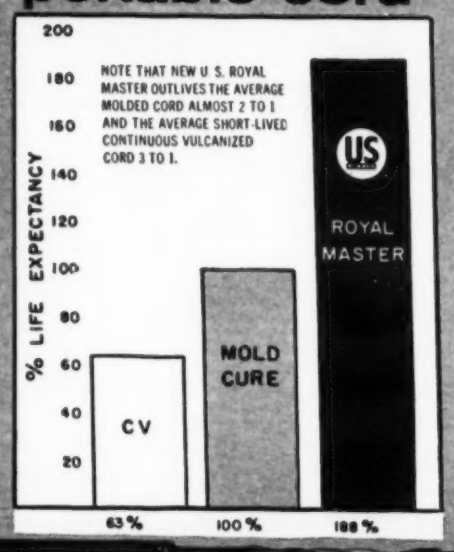
Models available for nearly all automatic and hand screw machines, turret lathes, radial drills, etc. Also useful for work-holding on lathes, milling machines and grinders. Holding capacities (without the use of bushings or other accessory equipment): 1/64"-5/16"; 3/64"-1/2"; 1/16"-3/4"; 1/8"-1"; 1/4"-1 1/2"

Write Dept. L for fully descriptive brochure

BROOKFIELD, INC., 240 Cushing Street, Stoughton, Mass.

▲ For more details circle **NED-513 A5** on enclosed inquiry slip ▲

Now . . . 88% longer cord life with new U. S. ROYAL MASTER portable cord



Far outlasts any other cord made!

Extensive tests, both in the laboratory and in outside plant installations, show U. S. Royal Master gives...

- **33.3%** greater heat resistance
- **55.7%** greater impact resistance
- **53.8%** greater abrasion resistance
- **30.6%** greater resistance to cutting
- **110.3%** greater resistance to tearing
- **21.2%** greater breaking strength
- **23.3%** greater oil resistance
- **128.8%** greater flexibility
- **88% longer life**

...than the average of all other molded cords—longer life than *any* other cord—surpassing even a hypothetical cord incorporating the best features of *all* competitive cords tested!

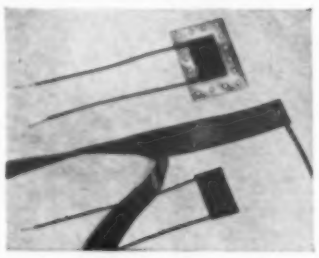
Yet new U. S. Royal Master costs the same as ordinary molded cords—actually gives you $1.88 in value for every cord dollar!

Write today for the full facts on the superiority of the new U. S. Royal Master portable cord over all others. See the savings it offers *you!*

UNITED STATES RUBBER COMPANY
ELECTRICAL WIRE AND CABLE DEPARTMENT
ROCKEFELLER CENTER, NEW YORK 20, N. Y.

▲ For more details circle **NED-514 A5** on enclosed inquiry slip ▲

FLEXIBLE HEATING ELEMENTS
electric units operate at 450° F



Usable for variety of heating applications ranging from maintaining temperature in mechanical and electrical apparatus to supplying heat for curing or baking, flexible electric heating elements are available in standard and special designs. These flexible blankets or strips have silicone rubber and Fiberglas cloth insulation which permit continuous operation at temperatures up to 450° F. For ease of mounting or for reduced flexibility, they can be supplied with perforated stainless steel backing. Less than 0.1-in. thick, elements range in size from 1 x 1½ in. to 24 x 42 in. Resistances range from 0.02 to 590 ohms per inch of length. Made by **Electro-Flex Heat, Inc.,** Dept. J-4, 516 Asylum St., Hartford 5, Conn.

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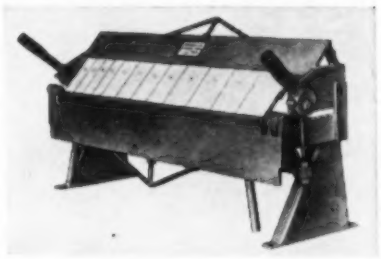
DIAL-TYPE RHEOSTAT
has 75 to 300-ohm resistance range

Small, compact, totally-enclosed model D-40 dial-type rheostat is hand operated with complete safety. It is rated 9 amps, 115 v ac-dc and 75 to 300 ohms, in continuous service. It allows step control for low-current applications in electronic, industrial, aeronautical and consumer equipment. Dial allows selection of 40 different resistances. Integral die-cast aluminum case is mounted on rubber pads for table-top operation. High quality ceramic core is continuously wound with alloy resistance wire. Made by **Colbert Die Cast Co.,** Mfg. Div., 5416 Tweedy Blvd., South Gate, Calif.

▲ For more details circle **NED-516 A5** on enclosed inquiry slip ▲

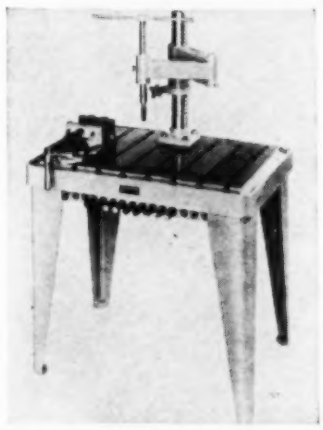
BENCH BRAKE
for short runs, does box or pan jobs



Accurate short run production and experimental metal forming, as well as plain or box and pan jobs that would tie up larger equipment can be done on model U332 universal bench brake. Capacity is a ⅜-in. flange on 22-gage mild steel, full 3-ft length. Fingers of case-hardened steel in widths of 2, 3 and 4 in. allow box depths to 3 in. Features include replaceable bronze bushings, easy adjustments and simple operation. Machine is portable for on-the-job set up. Made by **W. Whitney Stueck, Inc.,** Dept. N, Old Saybrook, Conn.

▲ For more details circle **NED-517 A5** on enclosed inquiry slip ▲

HAND TAPPING FIXTURE
assures accurately tapped holes



Consisting of 24 x 34-in. T-slot bed on bench-high legs and a jointed swinging arm which rotates on a rigid column mounted on bed, this Allman universal hand tapping fixture is usable in toolrooms, die and machine shops. Interchangeable tap holders for various size taps mount in swinging arm which can be raised or lowered to any desired height above work table. Movable column is clamped to bed with four T-slot bolts. Accessory set-up and hold-down tools include movable machine vise, clamps and T-slot bolts. Tap is readily positioned over holes to be tapped, accuracy is assured and tap breakage is minimized. Distributed by **Tools, Inc.,** Dept. 51, 1733-37 N. 25th St., Melrose Park, Ill.

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fast, economical parts assembly

Quadriga's modern high production facilities assure you precision quality, prompt delivery and lowest possible cost. All types of washers and metal stampings . . . press capacity to 150 tons, depth of draw to 4 in. . . . complete production line facilities for all types of parts assembly work.

Write for illustrated catalog . . . send B/P, sample or data for estimate.

THE QUADRIGA MANUFACTURING CO.
221 West Grand Avenue, Chicago 10, Illinois

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For Aisle Marking

PERMACEL 32 COLORED PLASTIC TAPE

PERMACEL® TAPES

Find out how you can use self-sticking tape . . . write Permacel Tape Corporation, New Brunswick, N. J.

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They go on FASTER and stay on LONGER!

PIC STEEL UNIONS for 150# Service

One reason you should get hold of Pics — you *can* get hold of them! Ends are uniformly flat sided to accommodate open end wrenches — and strong (of heavy steel pipe coupling stock). *2nd reason:* Pics look fine teamed up with original equipment (they're bright, good looking). *Third,* Pics are 100% zinc plated to minimize rust. *Fourth,* Pics have a special wedge type bronze seat for positive closure. *Fifth,* they cost less than a galvanized, no more than a black malleable union.

Write for FREE Samples

DART UNION COMPANY
132 Thurbers Avenue, Providence 5, R.I.
The Fairbanks Co. — Distributors
Boston • New York • Pittsburgh • Rome, Ga.

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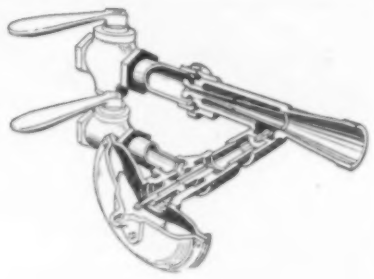
cut process heating costs: specify 'SURFACE' burners



Bring your heating processes right up to date in efficiency and economy. Specify Surface Combustion burners and get these extras:

(1) save fuel with automatic proportioning;
(2) simplify control equipment with one-valve operation;
(3) increase operating temperature range with high turndown ratio;
(4) change adjustments quickly and easily;
(5) increase safety with 'Surface' design which mixes gas and air at or near the burner

Surface Combustion's biggest-in-the-industry line of burner equipment—80 types, 800 sizes—gives you the right equipment for every process heating job. You get field-proven design, controls, safeguards, and auxiliaries in the same package. The rated 'Surface' catalog makes it easy to select the burners you need.

Write for literature H54-17.

Surface

SURFACE COMBUSTION CORPORATION, TOLEDO 1, OHIO

For more details circle NED-522 A5 on enclosed inquiry slip

GENUINE — SIMPLE

SILVER PLATING

"ON THE JOB" WITH POWDER

Purposes of silver plating need not be explained to you of the electrical field.

The biggest problems of silver plating are its convenience, economy and thoroughness. "Cool-Amp" silver plating POWDER is the answer to these problems.

"Cool-Amp" deposits a genuine coat of silver that will not peel off and provides cool maximum conductivity for copper, brass or bronze contacts. It has been proven equal to any electroplating for bolted and stationary contacts and is far more adaptable . . . always ready for use.

"Cool-Amp" POWDER offers a quick and easy solution to heating due to oxidation, improves the continuity of electrical service and reduces maintenance.

"Cool-Amp" is completely harmless to the user and is simple to apply. It can be used by any number of people at the same time. ON THE JOB, in underground vaults and sub stations and in hard-to-get-at places. The only equipment needed is a sharp steel wire brush or abrasive cloth, clean rag and water.

Dampen a rag, dip in "Cool-Amp" and rub on surface. One pound will silver plate approximately 6000 square inches.

$13.50 PER POUND SHIPPED PRE-PAID

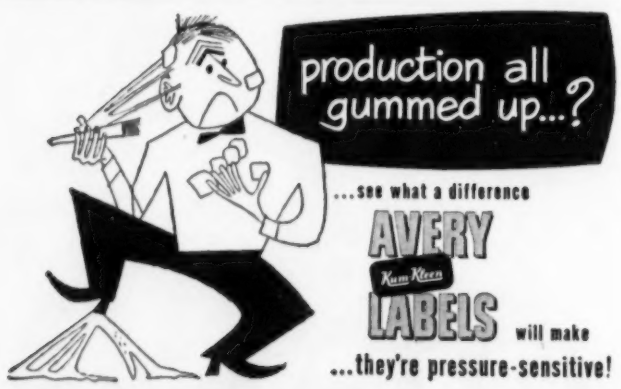
WRITE FOR FREE SAMPLE AND QUANTITY QUOTATIONS

GENUINE • SIMPLE SILVER PLATING

COOL-AMP

Dept. ED 8603 S. W. 17th Avenue • Portland 19, Oregon

For more details circle NED-523 A5 on enclosed inquiry slip



■ Self-adhesive Avery Labels are quick, clean and neat... there's no mess, no fuss, no sticky fingers. Combined with patented Avery dispensers, they'll speed and simplify your labeling—and production! They're laid right on your product—*without moistening.* They'll put your trade mark on that hard-to-label surface...put a warning sticker or wiring diagram on your product or any clean, smooth spot. For inspection stickers...color coding...guarantees—they'll really speed production, packaging or any labeling or marking job!

■ Available in sheets or rolls...in any size, shape or color. Write for case histories and FREE SAMPLES—*today!*

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☐ Send us case histories & free samples
☐ Tell us about your dispensers
☐ Have the Avery Label man call

Name
Company
Address
City State

For more details circle NED-524 A5 on enclosed inquiry slip

MOLDED PLASTIC VALVE
withstands 125 psi, 150° F

Molded in rigid form, Luncor polyvinyl chloride valve is suitable for pressures up to 125 psi and temperatures up to 150° F. Y-type globe design valve resists most chemicals used in industry. Also available is complete line of plastic fittings made of same material, including caps, couplings, plugs, unions, reducing bushings, flanges, 45-degree and 90-degree elbows and tees. Made by **Lunkenheimer Co.,** P. O. Box 360-KK, Cincinnati 14, O.

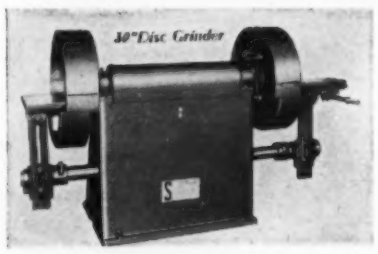
For more details circle NED-525 A5 on enclosed inquiry slip

BENCH CHECKING GAGE
adaptable to production inspection

Rapid checking of parts dimensions in small or large quantities is accomplished easily with this model BG103 Geneva production bench gage. Convenient hand lever lowers a hardened steel table to permit entrance of part beneath indicator plunger. Accurate repeat reading is obtained by positive stop spring return. Foot pedal actuating attachment is available for use where handling of parts requires use of both hands. Dial indicators with graduations ranging from 0.001 to 0.0001-in. can be supplied for specific checking requirements. Vertical capacity is $1\frac{3}{8}$ in. with a maximum throat capacity of $2\frac{13}{16}$ in. from column to center of table. Made by **Chicago Dial Indicator Co.,** Dept. F, 180 N. Wacker Dr., Chicago 6, Ill.

For more details circle NED-526 A5 on enclosed inquiry slip

DISK GRINDERS
double end units redesigned



Redesigned heavy duty double end disk grinders have pedestal with integral, large rocker arm bar with $8\frac{1}{2}$ x 14-in. swivel table at left and 8 x 14-in. lever feed table at right. Adjustable stop collars on rocker arm bar allow for either locking tables in fixed position, or to limit oscillating motion. Accurately machined heavy spindle is supported in large ball bearings with heavy end-thrust construction. Each side of machine has 30-in. steel plate disk accurately machined and balanced. Photo shows telescopic type steel wheel guards which compensate for wear of disk wheels. Guards have permanent exhaust outlets. Made by **Standard Electrical Tool Co.,** 2488 River Rd., Cincinnati 4, O.

For more details circle NED-527 A5 on enclosed inquiry slip

SOLENOID VALVES
for operating pressures to 3000 psi

Series of zero-leakage solenoid valves designed for use in guided missles, rockets and aircraft will operate under pressures of 3000 psi and ambient temperatures to 500° F. Valves are either direct operated or pilot operated by 18 to 30 v dc type single coil solenoid. The continuous-duty solenoid actuates valve in normally-closed or normally-open two-way or three-way position, controlling fluid or gas flow as required. Valves are capable of handling air, nitrogen, helium, oxygen, hydraulic oil, red or white fuming nitric acid, aniline, hydrazine, ethylene oxide, propyl nitrate, liquid oxygen, J.P.-4, J.P.-5 and hydrogen peroxide. Made by **Futurecraft Corp.,** Dept. A-1, 1717 N. Chico Ave., El Monte, Calif.

For more details circle NED-528 A5 on enclosed inquiry slip

Stainless Maintenance

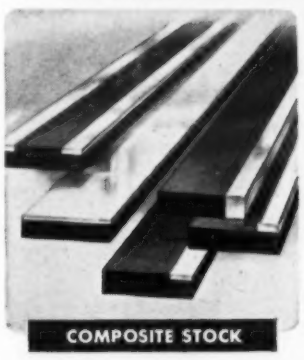
GIVE YOUR WELDS A LASTING "OK"

A prime requirement of successful maintenance welding is in the selection of the proper Stainless Rod or Electrode. In all respects the deposit of weld metal must offer maximum compatibility to the type and grade of stainless being welded. To assure sound, lasting welds in repair and renovation work, more and more welders are specifying Arcos for two reasons: (1) The wide selection of Stainless Rods and Electrodes assures a *right* one for every job. (2) Arcos quality controls in manufacture guarantee weld metal that is consistently uniform. For more information, write today for "What Electrode Would You Use". ARCOS CORPORATION, 1500 South 50th Street, Phila. 43, Penna.

ARCOS CORPORATION
1500 South 50th Street, Philadelphia 43, Pa.

For more details circle NED-529 A5 on enclosed inquiry slip

General Plate
COMPOSITE CONTACTS


COMPOSITE STOCK

FABRICATED ASSEMBLIES

Composite Contact Material that meets your requirements

Composite Contact Assemblies that cut your costs!

There are many advantages for using General Plate composite contact materials, processes and facilities. Among the more important are better performance, longer operating life and lower fabricating costs.

But that's not all — here at General Plate you have a single source that can supply your contact requirements be it composite raw stock, contacts or complete assemblies.

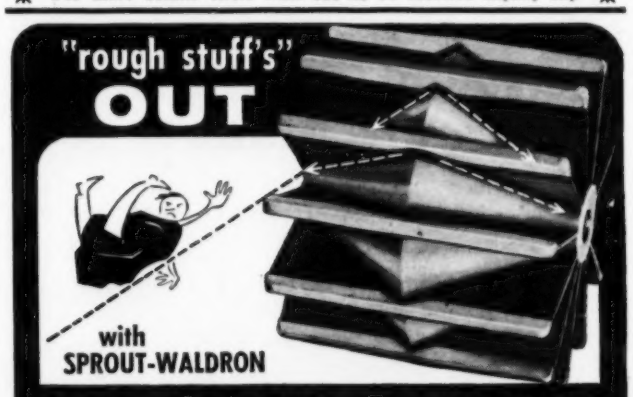
General Plate Composite Contact Materials make it possible to manufacture complete contact assemblies to close tolerances by single blanking and forming operations. Compare this to other methods whereby the contacts and supporting members are fabricated separately and then assembled by brazing, welding or staking methods.

By letting General Plate fabricate your complete contact assemblies, you will save money, time and trouble . . . needless equipment cost and problems of scrap disposal are eliminated . . . contacts and/or contact assemblies made to your exact specifications are shipped to you ready for installation.

Write for complete information and Catalog PR700.

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
81 FOREST ST., ATTLEBORO, MASS.

For more details circle NED-530 A5 on enclosed inquiry slip



BELT-SAVER PULLEYS

Sharp lumps and abrasive materials are cast out of Belt-Saver Pulleys by the exclusive cone and wing design . . . without lodging between belt and pulley. This protects belts so effectively that belt life is increased 50% to 400%.

For conveying and transmission use, Sprout-Waldron also offers a wide selection of sturdy cast-iron pulleys in many sizes and types.

Write for free booklets!

365

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8 LOGAN STREET • MUNCY, PA.

PELLET MILLS • HAMMER, ROLLER, ATTRITION, AND BURR STONE MILLS
MIXERS • SCREW, BELT, AND PNEUMATIC CONVEYORS • BUCKET ELEVATORS
CUTTERS CRUSHERS, AND FEEDERS • REELS, SEPARATORS, AND ASPIRATORS

For more details circle NED-531 A5 on enclosed inquiry slip

3000 FINISHED WIRE LEADS per hour . . . automatically

- measured
- cut to length
- stripped one or both ends
- counted

with the

ARTOS CS-6 AUTOMATIC

FAST, FULLY AUTOMATIC production of finished wire leads can save you hundreds of dollars in time and labor. In the cutting and stripping of insulated wire, cord, cable, etc., up to No. 10 stranded or No. 12 solid, the ARTOS CS-6 gives you these advantages:

- *Uniform stripping and cutting lengths.*
- *Elimination of human error.*
- *Quick, easy set up.*
- *Reduction of work spoilage, no nicking of wire.*

WRITE FOR FREE BULLETIN. Get the complete story Ask for Bulletin 35-C.

Automatic Wire Cutting and Stripping

ARTOS ENGINEERING CO.

2751 S. 28th St. • Milwaukee 46, Wis.

For more details circle NED-532 A5 on enclosed inquiry slip

NEW! storage system doubles floor capacity

RAPISTAN FLOW RACK eliminates need for multiple aisles, stores goods on conveyorized rack as deep as you need it, gravity power gives fingertip selection, new units move into reach as stock is removed. Complete visibility simplifies inventory control. First in, first out operation provides smooth, orderly stock flow, with minimum confusion and manual handling, lifting or carrying. And new production methods make FLOW RACK available to any business at a new low, self-installed economy cost.

FREE *Complete prices, details, sample of components on request.*

Rapistan FLOW RACK

The RAPIDS-STANDARD CO., Inc.
401 Rapistan Bldg.
Grand Rapids 2, Mich.

For more details circle NED-533 A5 on enclosed inquiry slip

CLEVELAND TRAMRAIL

SAF-POWR-BAR

Provides Safe Electrification

Safety is the big feature of SAF-POWR-BAR. It prevents accidental contact with electrified conductors on overhead materials handling equipment. Shocks and serious injuries are prevented because the heavy bar is enclosed with a flame-resistant insulating cover.

A pantograph-like sliding collector shoe operates in and makes contact with three sides of the bar. Service life of the sliding collector is usually over five times that of standard wheel-type collectors.

SAF-POWR-BARS are one of many features engineered to make Cleveland Tramrail overhead materials handling equipment the finest in its field.

THREE SAF-POWR-BARS ON TRACK

SLIDING SHOE CURRENT COLLECTOR

ASK FOR No. 2016
Get the facts on this modern electrification

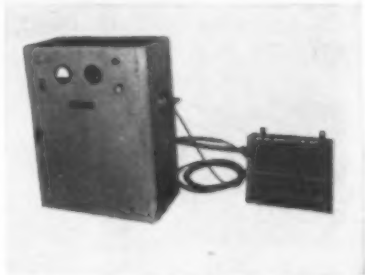
Safe Electrification with SAF-POWR-BAR 2016

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
6645 East 285th St., Wickliffe, O.

CLEVELAND TRAMRAIL

For more details circle NED-534 A5 on enclosed inquiry slip

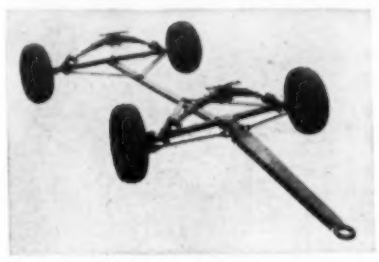
ULTRASONIC GENERATOR for cleaning large or small parts



Transducer assembly which contains five quartz vibrating crystals and a power oscillator, enclosed in a separate cabinet, are the two units of this ultrasonic generator for industrial cleaning equipment. High frequency sound waves emitted can be used to clean large parts in appropriate size tanks or in the mass production, continuous cleaning of small parts. Hermetically sealed transducers can be placed directly in the tank of solvent and can be remotely located from the oscillator. Four transducers can be operated from a single oscillator unit. Made by **General Electric Co.,** Schenectady 5, N. Y.

For more details circle NED-535 A5 on enclosed inquiry slip

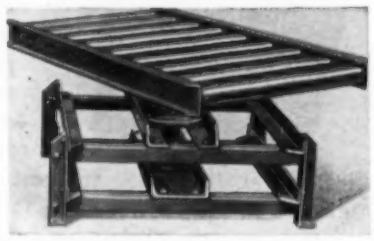
SPRING MOUNTED AXLE UNIT improved for greater load capacity



Lighter, smaller-beam axles are used in improved Caravan transverse spring mounted axle assemblies without sacrificing load carrying capacity. Four-wheel assemblies have weight capacities up to 3000 lb per axle. These units are used for transporting generators, air compressors welding equipment, field service equipment and fire-fighting apparatus. Reduced overhang, achieved by locating spring brackets close to tires, is responsible for improved carrying capacity. Other improvements are greater wheel base length and extra heavy duty radius rods and reach pole which hold axles parallel. Axles for supporting 2000 to 16,000-lb loads have been designed. Made by **United Mfg. Co.,** 10 W. Interstate St., Bedford, O.

For more details circle NED-536 A5 on enclosed inquiry slip

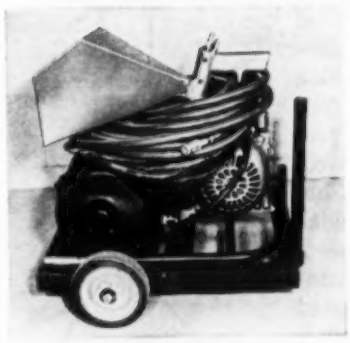
CONVEYOR TURNTABLE 500 and 1000-lb capacities



Selective switching to conveyor lines at sharp angles is made possible with this turntable-mounted conveyor section. Easy turning also permits assembly, painting, inspection and crating of heavy or cumbersome objects on the conveyor. Roller units are made in 500 and 1000-lb capacities in any width, length or height desired. Made by **Samuel Olson Mfg. Co.,** 2423 Bloomingdale Ave., Chicago 47, Ill.

For more details circle NED-537 A5 on enclosed inquiry slip

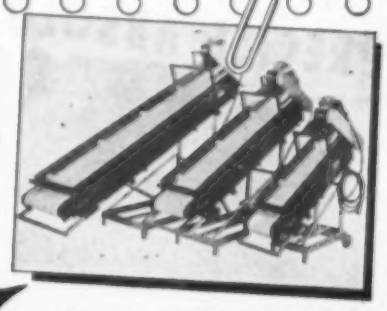
PORTABLE SPRAY UNIT for abrasive coating materials



Gypsum sand finishes, textured acoustic plaster, exterior stucco, cement or asphalt waterproofing or texture paints can be applied by the E-Z-Tex portable spray unit. It incorporates trigger switch, nonclogging spray mechanism and stainless steel and brass parts. Unit is easily changed from one color to another, or from an abrasive coating material to non-abrasive materials. Material from a large stainless steel hopper feeds into the spray chamber where it joins air under pressure. It is then forced through a tiny orifice which forms the spray pattern. Hopper is easily cleaned by flushing with water. Entire unit weighs 130 lb, is powered by a 1-hp, 110-v motor and rolls on rubber wheels. Made by **E-Z-On Corp.,** Dept. 43, 1725 W. Pershing Rd., Chicago 9, Ill.

For more details circle NED-538 A5 on enclosed inquiry slip

good idea!



SPEED PRODUCTION OF SMALL PARTS 50% or more and reduce costs 20% to 60% with versatile ARR-O-PARTS VEYORS . . . rugged, compact power belt units for industrial handling problems. Snug 'em up to presses to flow stampings steadily into tote boxes — saving time and floor space, freeing operators for production. Mount 'em horizontally for automatic handling between work stations. Available in nine standard models for virtually unlimited range of applications. Write for specifications, prices and name of nearest ARROW distributor — a materials handling *specialist.*

Full facts on all ARROW power and gravity conveyors. Write to:

arrow PRODUCTS, INC.
301 Arrow Bldg. 417 Front St. Grand Rapids, Mich.

For more details circle NED-539 A5 on enclosed inquiry slip

More

CAPACITY
VERSATILITY
RIGIDITY
ACCURACY*

More for your money in the new U. S. VERTICAL MILLING MACHINE

U. S. Vertical's balanced rigidity is the key to profitable production. Make the same comparison made by hundreds of plants. See why they find the U. S. Vertical to be the low-cost mill they demand. New "U. S." features include hard chrome plated quill, precision honed head and overarm bosses; and a quick change collet draw bar.

Write today for complete details. The U. S. Burke Machine Tool Division, 2 Brotherton Road, Cincinnati 27, Ohio.

***Accuracy Certified!** Check list showing results of actual inspection tests accompanies each machine.

Compare **FEATURES**

- Balanced head and motor
- Simplified belt-speed changing
- Conveniently located reversing switch
- Protected knee gearing
- Lubricated-sealed ball bearings
- Built-in spot light
- Swing-out Tool-Keeper
- Guaranteed close tolerances*
- Hardened and ground lead screws (optional)

Compare **SPECIFICATIONS**

	U. S. VERTICAL
Table Size	9½" x 36"
Longitudinal Feed	24"
Cross Feed	9¾"
Knee Travel	16½"
Quill Travel	5½"
Dovetail Depth	1¼" x 1½"
Vertical Screw	1⅜" dia.
Weight	1600 lbs.
Table Power Feed	0" - 12" per min. (infinitely variable)

Check these against ALL COMPETITION!

Compare **DELIVERY, TOO!** . . . our new plant addition permits us to promise and fulfill prompt deliveries.

THE U·S·Burke MACHINE TOOL DIVISION

For more details circle NED-540 A5 on enclosed inquiry slip

PRECISE ABSOLUTE PRESSURE

TYPE FA-206

W&T Precision Absolute Pressure CONTROLLER...
...coupled with electronic relay unit (not shown)
To Control the Absolute pressure of closed systems within narrow limits.
...Ranges: 0—20 mm through 800 mm Hg absolute in six ranges
...Accuracy: 1 part in 300 of full scale
...Sensitivity: 1 part in 500 of full scale
Write today for Publication No. TP-37-A.

WALLACE & TIERNAN
INCORPORATED
PRECISION INSTRUMENTS AND ELECTRICAL MECHANISMS
25 MAIN ST. BELLEVILLE 9, N. J.
In Canada: Wallace & Tiernan, Ltd., Toronto

A-104

▲ For more details circle **NED-541 A5** on enclosed inquiry slip ▲

fluids CAN'T PENETRATE this barrier

This Dome Nut SEALS WITHOUT SEALING COMPOUNDS

SPECIFICATIONS
Conforms to applicable requirements of AN-N-5. BUNA-N type seal conforms to MIL-R-6855 for aircraft fuels Types 1, 2, and 3. Temperature range: −80°F to +225°F continuous operation. Pressure range: ±50 psi constant or fluctuating.

This self-sealing, self-locking dome nut is being specified by more than 11 major aircraft manufacturers, for integral fuel tank sealing. Floating nut with stationary seal (floats .025 all directions) is unaffected by successive bolt installations. Reduces installation time, weight and maintenance.

Nutt-Shel
811 Airway, Dept. NED
Glendale 1, California
Citrus 4-4191—CH 5-3693

▲ For more details circle **NED-542 A5** on enclosed inquiry slip ▲

STOP Slipping! SAVE Power! SAVE Belts!

THE CLING-SURFACE "SLACK-BELT" WAY!

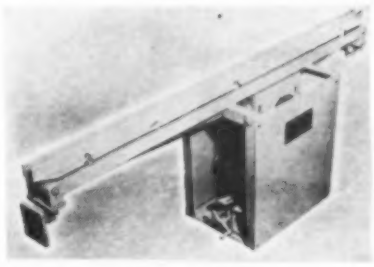
FREE SAMPLE

- Makes and keeps belts soft and pliable
- *Pliable* belt "clings" to "surface" of pulley
- Dissolves hard "glaze" that makes belts slip
- *Only* belt preservative that has met and passed U. S. Government Tests and Requirements
- Sold with money-back guarantee since 1896

Cling-Surface Company, Inc.
1045 Niagara Street • Buffalo, New York
Please send me FREE sample can of Cling-Surface "50" Belt Preservative
Name.....
Title.....
Company.....
City.....State.....

▲ For more details circle **NED-543 A5** on enclosed inquiry slip ▲

TRANSFER CONVEYOR
through-feeds cylinders to machines



Adaptable to variety of industrial equipment, model 1600 transfer conveyor through-feeds cylindrical work to centerless grinders, special polishing or inspection machines. Drive mechanism of this self-contained unit is powered by a ¼-hp 220/240-v, three-phase motor. Feed rate is controlled by means of variable speed drive, and a range of 7 to 28 fpm is available on standard unit. Model shown is designed for work ranges of ¼ to 1½-in. diameter. Models are available for other diameters. Made by **Feedall Machine & Engineering Co.,** Dept. ND, 38399 Pelton Rd., Willoughby, O.

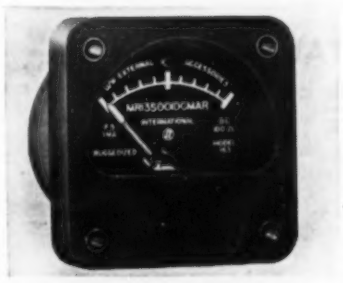
▲ For more details circle **NED-544 A5** on enclosed inquiry slip ▲

ALUMINUM PIPE WRENCH
lightweight and nonsparking

Beryllium - copper insert jaws on line of lightweight aluminum pipe wrenches make them nonsparking and therefore suitable for use in hazardous areas. Hook jaw on the heavy duty wrenches is made of 40-E aluminum alloy. Jaw inserts are as hard and durable as steel inserts which are also available. Wrenches are made in 14, 18, 24 and 36-in. sizes, the largest weighing only 9 lb 9 oz. Made by **Frontier Bronze Corp.,** 4859 Packard Rd., Niagara Falls, N. Y.

▲ For more details circle **NED-545 A5** on enclosed inquiry slip ▲

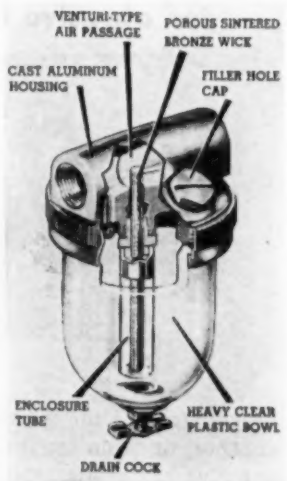
MINIATURE PANEL METERS
built to resist moisture and shock



Ranges of 0-100 microamperes, 0-1 milliamperes and 0-10 millivolts dc are available in model 163 1½-in. ruggedized miniature panel meters. They meet pertinent government specifications for moisture resistance, water tightness, thermal shock, tumbling and high shock. Operation is in range from −55 to 85° C. Meters have dielectric strength of 1500 v rms and have initial accuracy within ±3 per cent of full scale deflection. Made by **International Instruments Inc.,** Dept. NED, P. O. Box 2954, New Haven 15, Conn.

▲ For more details circle **NED-546 A5** on enclosed inquiry slip ▲

AIR LINE LUBRICATOR
for pneumatic tools and equipment



Improvements made in company's air line lubricators include porous sintered bronze wick with clear plastic enclosure tube which provides a high oil feed range. A low range is provided with tube removed. Further variations are obtained by adjusting wick height. Two orifice inserts furnished with lubricator can be used to reduce rated air capacity for low air-flow applications. Large hole insert provides normal oil feed when air is flowing at 75 to 80 per cent of capacity with no orifice insert, while smaller hole insert provides oil feed at 35 to 40 per cent of normal air flow. Wick enclosure tube allows use of oils from light spindle type through SAE No. 10, including rust inhibiting types. Made by **Keller Tool Co.,** Dept. N, Grand Haven, Mich.

▲ For more details circle **NED-547 A5** on enclosed inquiry slip ▲

YOU CAN —
- REPLACE COSTLY HIGH ALLOY STEELS!
- CHECK CORROSION and HEAT OXIDATION!

The Amazing — New

Alumicoat PROCESS*

PROTECTS CARBON and LOW ALLOY STEELS FROM HIGH TEMPERATURE OXIDATION!

Now available, the ALUMICOAT Process protects steel and its alloys from both chemical and elevated temperature corrosion by metallurgically bonding aluminum or its alloys to the ferrous metals!

Write today for brochure and complete information!

*LICENSED UNDER GENERAL MOTORS CORPORATION PATENT NO. 2,569,097

ARTHUR TICKLE ENGINEERING WORKS, INC.
21-25 Delevan Street MAin 5-4200 Brooklyn, N. Y.

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Morse HY-VO Drives

FREE CATALOG

- Cut power-transmission costs up to 50%
- Transmit more power—99% efficiency
- Do away with outboard bearings and mountings
- Save weight, bulk and space

Morse Hy-Vo Drives operate at velocities over a mile a minute, transmitting up to 5000 hp.; they reduce shock loading, severe chain stress, noise, vibration and heating.

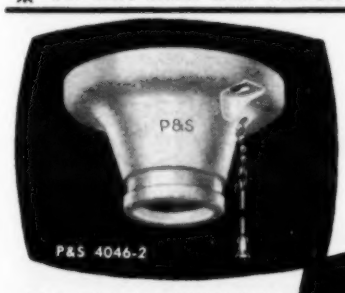
Rugged Hy-Vo creates major savings when used on drill rigs and slush pumps. Hy-Vo gives low-cost, high-speed power.

Write, today, for engineering data on how you can use high-speed, heavy-duty Morse Hy-Vo Drives to save money in countless applications. Find out how Hy-Vo Drives can benefit you. Ask for Catalog C 72-51.

MORSE CHAIN COMPANY
7601 Central Avenue
DETROIT 10, MICHIGAN

MORSE BW MECHANICAL POWER TRANSMISSION PRODUCTS

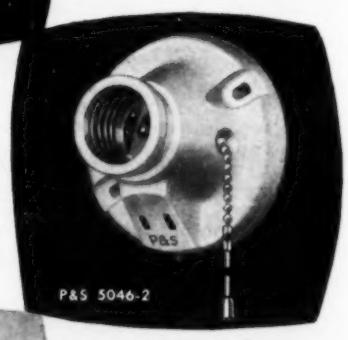
▲ For more details circle **NED-549 A5** on enclosed inquiry slip ▲



P&S 4046-2

P&S PULL LAMPHOLDERS
One-piece design — no shadeholder to become loose. Built-in mechanism — can be wired without removing interior.

P&S PULL LAMPHOLDERS WITH CONVENIENCE OUTLETS
Same basic design as P&S 4046-2, *plus* outlet connected internally — no extra wires, soldering or taping.



P&S 5046-2

your choice make it . . .

Fine P&S porcelain—precision-built mechanism — will stand up under years of hard usage.

P&S

Dept. N
PASS & SEYMOUR, INC.
SYRACUSE 9, NEW YORK
Offices: 71 Murray St., New York 7, N. Y.
1229 W. Washington Blvd., Chicago 7, Ill.

For information on complete P&S Line, send for Catalog No. 49. Specify P&S by catalog number.

▲ For more details circle **NED-550 A5** on enclosed inquiry slip ▲

A *PROVEN DYNAMIC and STATIC PRODUCTION

BEKO

BALANCER

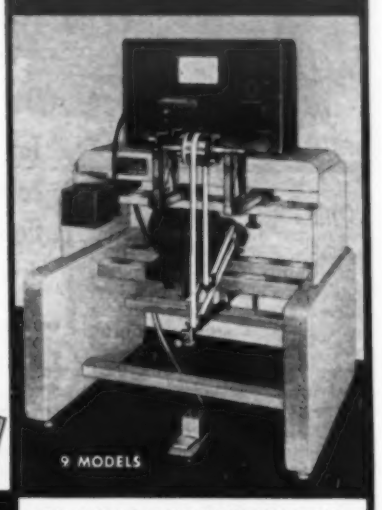
A Quality Machine at Lowest Cost!

* Proven in Use ease of use by unskilled operators.

* Proven in Use for direct and accurate indications.

* Proven in Use for convenient and rapid operation.

* Proven in Use for dependable heavy duty service.



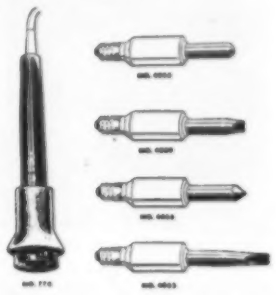
Ask us how a BEKO Balancer will cut costs for you . . . WRITE FOR CATALOG!

BALANCE ENGINEERING CO.
CHICAGO
SALES DIVISION: MACDELL CORP.
846 WEST LAKE STREET
CHICAGO 7, ILL.

For more details circle NED-551 A5 on enclosed inquiry slip

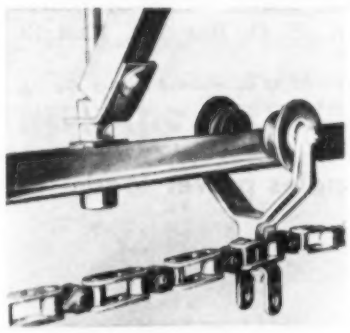
SOLDERING TIPS
for pencil type soldering tool

Four interchangeable Super Hi-Heat soldering tips are available for fitting into the Ungar Soldering Pencil handle. Tips reach temperatures of from 850 to 1000° F, sufficient for heavy duty service in spite of 47½-w rating. Chisel, pyramid, heavy chisel and heating tips are tellurium copper with iron plating. Made by **Ungar Electric Tools, Inc.,** 4101A Redwood Ave., Venice, Calif.



For more details circle NED-553 A5 on enclosed inquiry slip

OVERHEAD CHAIN CONVEYOR
6-in. minimum turn and dip radius



Full length of any dip tank serviced by overhead conveyor can be utilized by the Multi-Plane overhead chain conveyor which has a minimum radius of 6 in. in turns and dips. Track hangers and bolted straight, curve and dip sections of track are easily installed. Chain requires no lubrication. Trolley yokes are cast aluminum, and sintered steel trolley wheels are lifetime lubricated. Drive unit is self-contained and is complete with frame and hanger holes. The 23-in. standard drive sprocket is driven by a standard motor with 6:1 variable speed attachment and suitable speed reducer. Other sprocket sizes are available. Made by **Multi-Plane Chain Corp.,** Dept. ND, 19 Michael St., East Haven 13, Conn.

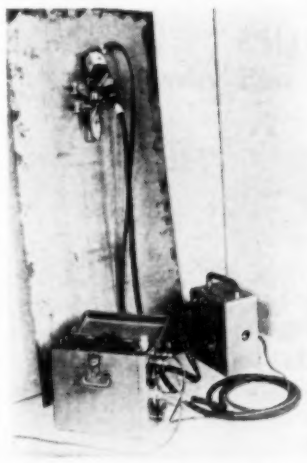
For more details circle NED-554 A5 on enclosed inquiry slip

WORK-HOLDING CLAMPS
flop-over action clears work area

Models 509-U and 509-S clamps feature low silhouette, complete clearance of working area, flop-over action and red plastic handle grip. Angular flange base permits mounting by bolts or welding to side of fixture. When so mounted, the holding bar flops over side of fixture to provide positive firm gripping action at a 45-degree angle directly against upright fixture base. They are particularly adaptable for holding parts of metal, plastics or wood. Model 509-U has U-shaped holding bar, 375-lb holding pressure and is recommended where welding facilities are not available. Model 509-S, illustrated, has solid carbon steel work-holding bar to which a wide variety of spindle assemblies can be attached or welded. Its holding pressure is 500 lb. Made by **Detroit Stamping Co.,** 315 Midland Ave., Detroit 3, Mich.

For more details circle NED-555 A5 on enclosed inquiry slip

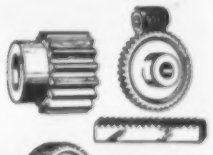
PORTABLE STRESS ANALYZER
uses x-ray diffraction method



Magnitude and sense of residual stresses in metals, plastics and other materials are measured by the Androscope portable stress analyzer which uses x-ray diffraction. Offered for field and plant operations, analyzer readily distinguishes between tensile and compressive stresses. It records stresses visually on film in 10 to 20 minutes. A rapid comparator provides quantitative measurement which is used to determine magnitude of stress in pounds-per-square-inch from simple formula. Made by **Holger Andreasen, Inc.,** Dept. NED-S1, 703 Market St., San Francisco 3, Calif.

For more details circle NED-556 A5 on enclosed inquiry slip

How cost-wise buyers rate STANDARD STOCK GEARS



2,000 TYPES AND SIZES

IN STOCK AT 92 BOSTON GEAR DISTRIBUTORS at Factory Prices

Look under "Gears" in the Yellow Classified Section of your Telephone Directory for the one nearest you.

Get the 384-page BOSTON Gear Catalog . . . industry's most valued "textbook" of drive design and maintenance. Ask your BOSTON Gear Distributor, or write Boston Gear Works, 69 Hayward St., Quincy 71, Mass.

For more details circle NED-557 A5 on enclosed inquiry slip

NEW

— Amazing Sensitivity!

Less air is used to operate the Dodge Air-Grip. The result is a new sensitivity that enables the operator to "inch" the clutch, or to throw it into full engagement, as required. Quick release valves are built into the clutch itself as optional equipment. Air-Grip's unique design places the air seal disc at the end *farthest* from the pressure plates, which generate the heat. This, with automatic internal ventilation, insures cooler operation, longer life. **WRITE** for Bulletin.

DODGE MANUFACTURING CORPORATION, 2100 Union St., Mishawaka, Ind.

DODGE of Mishawaka, Ind.

For more details circle NED-558 A5 on enclosed inquiry slip

BEST NEWs in 30 years!

ERIE PIPEMASTER

VISE and STAND

NEW PIPE VISE

Adjusts Automatically from 1/8" to 2-1/2" pipe with less than 1 turn of the screw!

CHECK THESE EXCLUSIVE FEATURES:

Fast, automatic adjustment* • Vertical pipe benders on 2 sides • 3-faced, long top jaw—triple jaw life • 2-faced, long bottom jaws

NEW TRIPOD VISE STAND

Including Automatic Adjusting Yoke*
Won't walk . . . rugged, fast-acting!

CHECK THESE OUTSTANDING FEATURES:

Large, hinged, malleable tray • Ceiling hold-down screw • Easy to fold and carry. *pat. pend.

All Parts of All Erie Tools are Job-Tested and Unconditionally Guaranteed

Look for Pipemaster's completely redesigned line of hand pipe tools — wrenches, cutters, vises, stands.

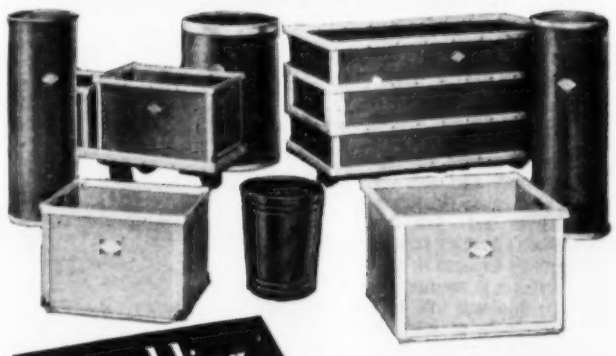
ERIE PIPEMASTER

ERIE TOOL WORKS
ERIE, PA., U.S.A.

For more details circle NED-552 A5 on enclosed inquiry slip

SEND FOR FREE CATALOG ON SPAULDING FIBRE RECEPTACLES

A complete line of tough, lightweight, shock-proof containers for storage and materials handling. Resistant to moisture, impact and abrasion. Won't splinter or corrode.



Spaulding

Boxes, barrels, trays, trucks in all sizes and weights.

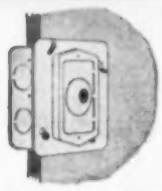
SPAULDING FIBRE CO., INC., DOVER, N. H.

Please send me by return mail your catalog on Spaulding's complete line of Fibre receptacles.

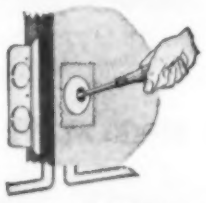
Name _____
Firm _____
Address _____
City _____ Zone _____ State _____

For more details circle NED-559 A5 on enclosed inquiry slip

U. S. Pat. No. 2,574,382



Cover with Locator KO installed. Opening protected and location marked.



Bend Locator KO back and forth until ties are broken. Then remove KO. Box is free of debris.

This new Raco Locator KO feature is an integral part of the device ring. It makes outlet boxes easy to find when hidden by plaster. Keeps boxes clean and prevents plaster cracking about box. Wiring and device installation can be done at once. You avoid all plaster problems with the Raco Locator cover.

Write for Complete Information.

ALL-STEEL EQUIPMENT INC., Aurora, Ill.

For more details circle NED-560 A5 on enclosed inquiry slip

STOCK BIN LOADER
handles bundles or stacks

Designed primarily for storage areas where large bundles or stacks of materials are received for warehouse bin storage but where stock is removed in small quantities, this Beacon bin loader has capacity up to 10,000 lb. It consists of hydraulically operated loader of any required length. Stack or bundle of material to be placed in bins is positioned on loader platform by fork truck or crane. Loader is then picked up by truck or crane, raised vertically and moved horizontally to bin. Unit locks on front of bin. Actuating pushbutton causes loader to move load into bin by hydraulic power. Made by **Beacon Machinery, Inc.,** Dept. A, P. O. Box 188, East St. Louis, Ill.

For more details circle NED-563 A5 on enclosed inquiry slip

ELECTRONIC RELAY
control box handles power loads

This electronic relay control box is capable of handling substantial power loads with a response as low as 2 microamperes from the contacts of the regulating devices. It operates in either normally-open or normally-closed circuit with simple change - over switch. Power loads up to 15 amp are handled. Four plug-in receptacles include one for continuous power, two for intermittent power and one for regulating device. Unit operates on 115/230-v 50 or 60-cycle ac. Applications include control of electric heater circuits using thermoregulators, water level or flow, load circuits and timing devices. Made by **Precision Scientific Co.,** 3735 W. Cortland St., Chicago 47, Ill.

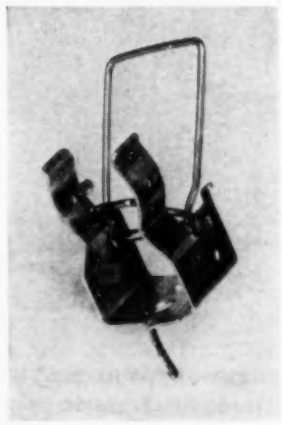
For more details circle NED-564 A5 on enclosed inquiry slip

LABORATORY TIMER
bench unit holds stopwatch

Accurate timing of laboratory processes as well as industrial operations are accomplished readily with this Watch - Guard stopwatch holder. Accuracy is assured because device permits starting and stopping of stopwatch by single tap on broad bar release. Adjustable lock bolt on bar release can be set for just the right travel so that even a hammer blow on it will not damage the watch. Provision is made for foot actuation of watch if desired. This diecast holder can be used on bench, mounted on table or hung vertically on wall. Rubber fingers hold stopwatch gently but securely in place. Price is $6.25. Made by **Fisher Scientific Co.,** 715 Forbes St., Pittsburgh 19, Pa.

For more details circle NED-565 A5 on enclosed inquiry slip

FUSE & RESISTOR CLIPS
withstand shock and vibration



Ejector feature of Navy type fuse and resistor clips makes fuse changing an easy matter. Clips retain locking characteristics under extreme conditions of shock and vibration. They consist of silver plated phosphor bronze clasps and passivated stainless steel springs. Three ferrule diameter sizes, three different lug lengths and ejector or nonejector springs are available. Made by **Raytheon Mfg. Co.,** Dept. 6120, Waltham 54, Mass.

For more details circle NED-566 A5 on enclosed inquiry slip

The Sign of QUALITY Motor Control

ROTARY PILOT SWITCHES
for Every Type of Service

The Allen-Bradley line of Bulletin 806 rotary pilot switches comprises three styles of small drum switches:

Style A master switches are used to operate reversing and non-reversing magnetic starters. Style B transfer switches are used to select or transfer control circuits. Style C instrument switches are used to switch indicating instrument circuits. Send for the A-B Handy Catalog.

Allen-Bradley Co., 1334 S. Second St., Milwaukee 4, Wis.
In Canada—Allen-Bradley Canada Ltd., Galt, Ont.

ALLEN-BRADLEY QUALITY MOTOR CONTROL

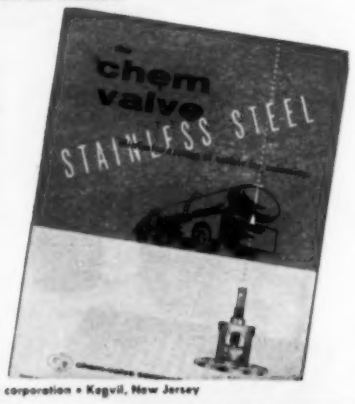
For more details circle NED-561 A5 on enclosed inquiry slip

FREE..

*chem-valve FOLDER DESCRIBES NEW TRUCK TANK VALVE

This new illustrated color folder has full information on the "Quick Discharge" Chem-Valve. Tells how you can save many hours by speeding up unloading of bulk liquids. Full specifications, prices, parts list, delivery date are also available.

This New Stainless Steel Chem-Valve is ruggedly constructed to give you "trouble-free" service for the life of the tank. You get four big arch entrances and a 3⅜" diameter opening that can't be clogged, even with congealing liquids. Mounted inside the tank. Safe from damage. Complete valve accessories furnished for quick installation in any size tank. Easy to operate with handwheel on top of tank. Universal joints prevent binding caused by tank distortion.



*TRADE MARK of *chem-valve corporation • Kenvil, New Jersey

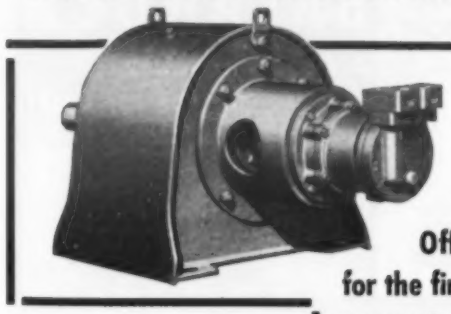
Chem-Valve Corporation
99 Berkshire Valley Rd., Kenvil, New Jersey
MAIL THIS COUPON TODAY

Yes, Send Along Your New Color Folder..... Sounds Interesting
Name..... Title.....
Company.....
Address.....
City..... State.....

chem-valve corporation 99 Berkshire Valley Rd., Kenvil, New Jersey

For more details circle NED-562 A5 on enclosed inquiry slip

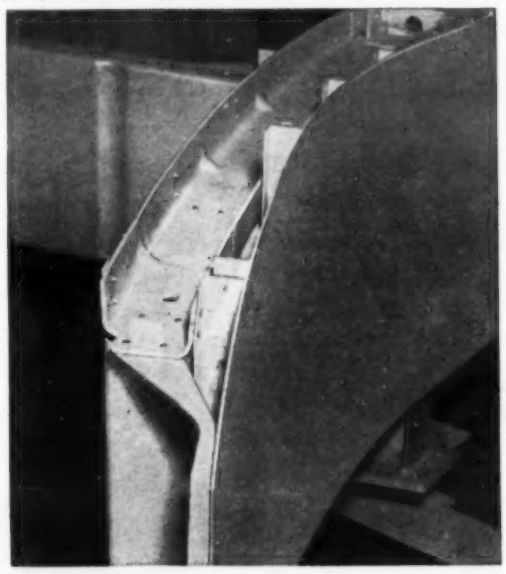
NOW! NEW OILGEARDUCERS



Offering for the first time compact, packaged, fluid power output drive units!

Oilgearducers are new integral output drive units combining Oilgear Fluid Power axial piston motors and Falk All-Steel Reducers. There are horizontal and vertical models, concentric and right angle types and single, double, triple and quadruple reduction. Now, for the first time you can get a complete, easy to install, "ANY-SPEED" output unit for your high torque, low maximum speed drives. When used in combination with Oilgear Fluid Power Pumps, these reversible Oilgearducers provide infinite variability of speed, absolutely controlled rate of acceleration and deceleration, smooth, swift reversal, cushioned braking. All these together with major economies in motor, circuitry and power requirements. This new Oilgearducer "Any-Speed" output unit is available in sizes from 1 to 20 h.p. It is unequalled for applications as diverse as can-filling, paper machines, centrifugals, cable wrappers . . . and in automation or feed back applications where synchronization is an absolute necessity. Write now for new bulletin 56610. THE OILGEAR COMPANY, 1582 W. Pierce St., Milwaukee 4, Wis.

For more details circle NED-567 A5 on enclosed inquiry slip



Radar-antenna corner assembly could be a headache, but Du Pont Industrial Rivets assure quick work.

TRICKY FASTENING IN SECONDS
with Du Pont Industrial Rivets

Tough fastening jobs taking too long in your plant? Try Du Pont Industrial Rivets. These split-second fasteners have what it takes to speed "problem" work . . . as the Special Products Division of I-T-E Circuit Breaker Co. in Philadelphia found out.

I-T-E's Special Products Division manufactures radar antennas, and if there ever was a stiff job—this is it! Blind fastening, hard-to-reach spots and tight work—*all* in one assembly! To handle it, they decided to try Industrial Rivets, and licked the problem on the spot. Shopmen can set up to 25 a minute, with no after-finishing to slow them down. And fastening's simple: drill holes, insert Rivets, apply heated iron—that's all! Rivets expand, lock in place. It's a full 50% faster than conventional methods.

Get the complete story on work-saving, money-saving Industrial Rivets from your jobber, or write for free 32-page booklet to: E. I. du Pont de Nemours & Co. (Inc.), Explosives Department, Wilmington 98, Delaware.

DU PONT *Hi-Speed* INDUSTRIAL RIVETS

A Product of Du Pont Explosives Research

DU PONT

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

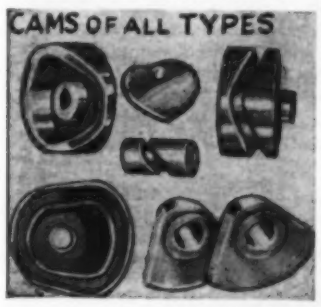
For more details circle NED-568 A5 on enclosed inquiry slip

TURNTABLES AND POSITIONERS over 100 different types for welding, brazing, soldering, spraying, glass insulator melting and glass glazing, with rotating stations and indexing with barrel cam or geneva gear action. For work transferring, tilting positions, motorized or hand operated. Rotating tables of all kinds for over 33 years. Many types made by EISLER. We supply any part or complete equipment and we make special turntables to your order. Write for catalog.

Eisler Indexing Turntables are Completely Electrically Controlled.

CAMS

MADE TO YOUR SPECS.



DR. CHARLES EISLER, M. E., PRES.
EISLER ENGINEERING CO. INC., 740 S. 13TH ST., NEWARK 3, N. J.

▲ For more details circle **NED-569 A5** on enclosed inquiry slip ▲

TUBING BY SUPERIOR SAVES 33% ON PRODUCTION COST OF AUTOCLAVE COVERS

Autoclave Engineers, Inc. of Erie, Pa. made a 33% saving on covers of "dash pots" for pressure-testing materials by using tubing as a component. Stainless steel forgings used in covers of these Magne Dash* autoclaves had to be machined and deep drilled—time-and-material wasting operations. Superior cold drawn stainless tubing Type 316 eliminated this expensive work and reduced scrap loss almost to zero. At the same time, minimum yield strength was raised from about 40,000 psi to 100,000 psi. Easily threaded, corrosion resistant Type 316 tubing —or one of our more than 55 other analyses—may well end one of *your* problems. Send for our free Catalog Section 20 on Stainless Steel Tubing, and tell us about your tubing needs.

*Licensed by Standard Oil Company (Indiana) U.S. Patents 2631091 and 2661938

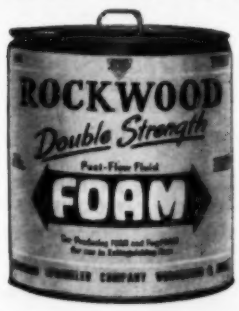
All analyses .010" to ⅝" O.D.
Certain analyses in light walls up to 2½" O.D.

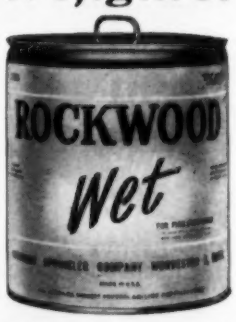
SUPERIOR TUBE COMPANY
2018 Germantown Ave., Norristown, Pa

Superior Tube
THE BIG NAME IN SMALL TUBING

▲ For more details circle **NED-570 A5** on enclosed inquiry slip ▲

Cut Fire Losses with These Firefighters





Rockwood Double Strength FOAM covers burning surfaces faster, seals off combustible vapors and flows freely around obstructions — even at sub-zero temperatures. Three parts FOAM mixed with 97 parts water form a foam blanket that re-seals if broken. Because it's concentrated, FOAM saves storage space and shipping costs.

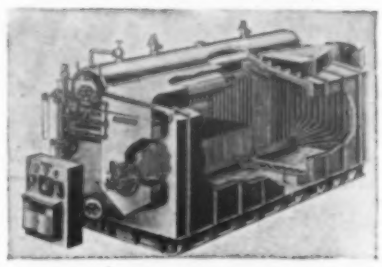
Rockwood WET increases firefighting action of water, is a great aid in putting out deep-seated fires involving combustibles such as wood, paper, cloth. Also excellent wherever water is scarce. With WET, rekindling is reduced.

Use Rockwood's FOAM Eductor and Type SG-60 Nozzle for introducing these firefighting liquids into your hose lines. For complete details, write for free, illustrated Rockwood catalog, "Fire Fighting Products." Distributors in all principal cities.

ROCKWOOD SPRINKLER COMPANY
Engineers Water . . . to Cut Fire Losses
341 HARLOW STREET, WORCESTER 5, MASSACHUSETTS

▲ For more details circle **NED-571 A5** on enclosed inquiry slip ▲

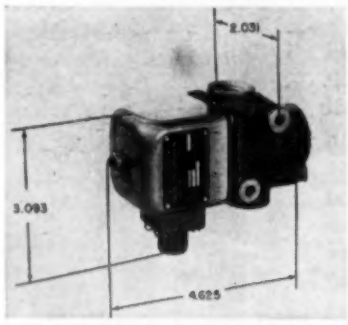
STEAM GENERATORS
deliver up to 40,000 lb per hour



Gas, variety of fuel oils, or both can be used to fire line of type D packaged watertube steam generators which are completely assembled and fire-tested at the factory before shipment. Continuous capacities are up to 40,000 lb per hour and units may be combined in batteries for any required total capacity. Features include rear-mounted forced draft fan to air-cool furnace roof, tangent tube waterwall construction, single or multiburners, optional soot blowers, adequate manhole and inspection openings and air shielded observation port. Made by **Superior Combustion Industries, Inc.,** Room 305, 1475 Broadway, New York 36, N. Y.

▲ For more details circle **NED-572 A5** on enclosed inquiry slip ▲

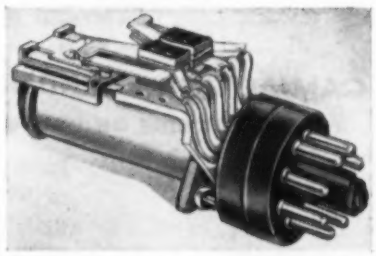
PNEUMATIC VALVES
with 0 to 3000-psi pressure range



Complete selection of solenoid - operated pneumatic shutoff and selector valves for aircraft, guided missiles and industrial applications is now available. Pressure range is from 0 to 3000 psi and temperature range is from −65 to 265° F. Valves draw less than 1-amp current at 24 v dc, continuous duty. Made by **Mar Vista Engineering Co.,** Dept. A, 5420 W. 104th St., Los Angeles 45, Calif.

▲ For more details circle **NED-573 A5** on enclosed inquiry slip ▲

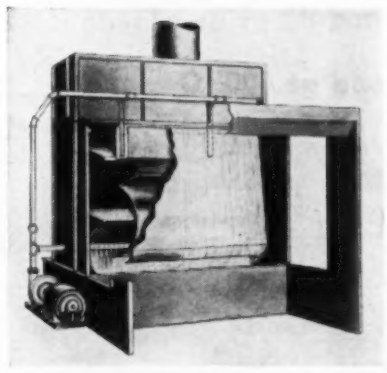
PLUG-IN RELAY
with up to 24 contact arms



Installation, inspection or replacement of relays without disturbing wiring is possible with this plug-in unit. When used in portable equipment, the open type relay can be removed readily for protection in transit. It can be furnished with standard contact combinations up to 24 arms. Standard contact ratings are 2 amp at 24 v dc or 115 v ac. Bifurcated contacts for extremely low voltage and low current or heavier contacts rated up to 5 amp can be furnished. Operating voltages available range from 6 to 230 v ac or dc. Made by **Magnecraft Electric Co.,** 1442-G W. Van Buren St., Chicago 7, Ill.

▲ For more details circle **NED-574 A5** on enclosed inquiry slip ▲

WATER SPRAY PAINT BOOTH
violent spray turbulence cleans air



Positive air cleaning action of the Cleanaire water wash paint spray booth prevents paint pigments and volatiles from reaching exhaust stack or outside of building. Air scrubbing chamber features spray header mounted within two curved baffle plates. Water pumped into header sprays in three directions from three rows of orifices and strikes baffle plates, building up violent spray turbulence that removes almost 100 per cent of paint particles. Unit will exhaust air containing not more than 5 grains of solid per every 1000 cu ft, and containing not more than 50 parts per 1 million solvent vapors. Construction is 18-gage steel panel type with formed channel edges for extra strength. Made by **Despatch Oven Co.,** 325 Despatch Bldg., Minneapolis 14, Minn.

▲ For more details circle **NED-575 A5** on enclosed inquiry slip ▲

SAVE UP TO 85% ON GOVERNMENT SURPLUS

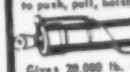
MAGNI-FOCUSER

Has fine ground lenses of optical glass. Neutralizes eye strain from close work. Binocular design gives third dimensional vision. Allows freedom of both hands. Wear over glasses. Plastic frame with adjustable headband.

SIZES: 20" focal lgth. 1½ power — 14" focal lgth., 1½ power, 10" focal lgth., 2½ power; 8" focal lgth., 2½ power . . . . . price each ONLY **10.50**

HYDRAULIC EQUIPMENT

We stock over 100,000 Hydraulic Cylinders in 106 different types and sizes. These can be adapted wherever tremendous power is needed to push, pull, hoist, mould or drive, etc.



SPECIAL

Gives 29,000 lb. thrust using 1500 PSI line pressure as obtained from our hydraulic pumps. Will produce up to 40,000 lb. thrust with 3000 PSI. Can also be used on a low pressure air system. Has 4" bore; 18" stroke; 30½" long. Ideal for shop. USED **29.95**

Part No. 29 NEW **43.95**

OTC TOOLS

See our complete line. Pullers for Gears, Bearings, Wheels, Pulleys, Bushings, Shafts, etc.

NEW 10 TON HYDRAULIC PRESS

Use this Press in the Shop or take it with you on the job. Frame is 4" welded channel iron. Has 4⅛" stroke, 2⅝" diam. ram. Valve operates piston in both directions. Adjustable platform. Positive power Hand Pump with handle. 2000 PSI pressure gauge. SIZE: 48" high 27" wide 29" base **129.00**

HYDRAULIC HAND PUMP

Operating pressure 1500 PSI. Can., 1.5 cu. in per complete cycle . . . **12.75**

HYDRAULIC ACCUMULATORS

A-2B FLOATING PISTON TYPE – 4"x 18". Built to stand 2,000 PSI **12.75**

A-5 VICKERS – 10" dia. Ball type. Built to stand 2000 P.S.I. **24.50**

NOTE: Stocks include bargains in Hydraulic Pumps – Valves – Motors – Boosters – as well as Oil, Water and Fuel Pumps, etc.

WORLD'S MOST AMAZING BARGAIN CATALOG

320 PAGE-1954 EDITION

Packed with SENSATIONAL VALUES in GOV'T SURPLUS – FACTORY CLOSE-OUTS – and GENERAL MERCHANDISE. Fully priced and illustrated. Thousands of items in Machine and Industrial Tools – Hydraulic Equipment such as Cylinders, Pumps, Valves, Motors, Fittings, etc. Bargains in Electric Motors, Generators, Blowers, Parts, etc. Also Hand and Power tools, Precision Instruments, Bearings, Hose Clamps, Winches, Foam Rubber, Microscopes, etc. ALL AT PALLEY BARGAIN PRICES – PRICED TO SELL!

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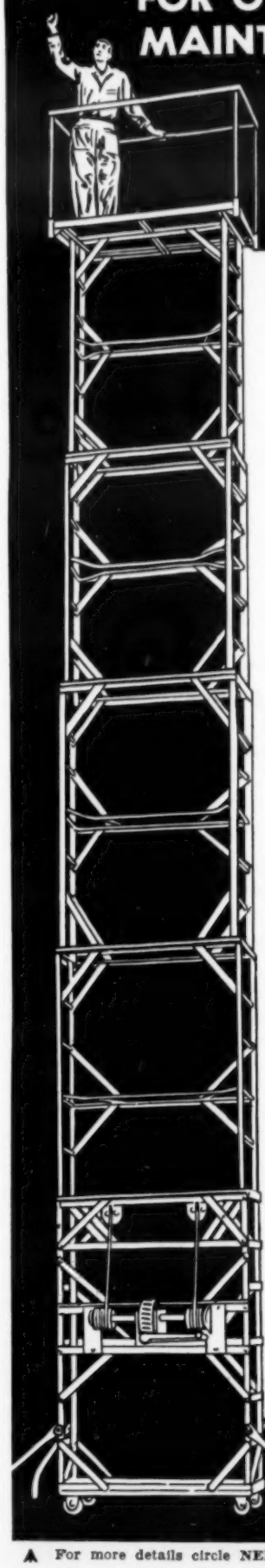
Pay by M.O. or check. P.O.'s accptd. from D&B firms. ½ deposit with C.O.D.'s. Prices FOB Los Angeles

▲ For more details circle **NED-576 A5** on enclosed inquiry slip ▲

FOR OVERHEAD MAINTENANCE . . .

Painting . . .
Lighting . . .
Cleaning . . .



HI-LIFT *Portable* **WORK PLATFORM**

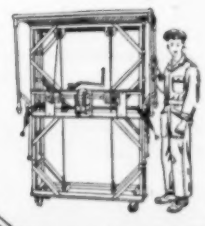
- No Erection Required
- Use at Any Height
- Safe, Sturdy, Dependable
- No Loose Parts
- Easily Rolled . . . Easily Raised

Sturdy, all welded steel construction means absolute safety . . . outrigger brace prevents tilting or rolling. Small enough to pass through doorway, yet raises to 20 ft. Endorsed by leading concerns.

Also Makers of HI-LIFT Extension Scaffold and ATLAS Portable Loading Platform

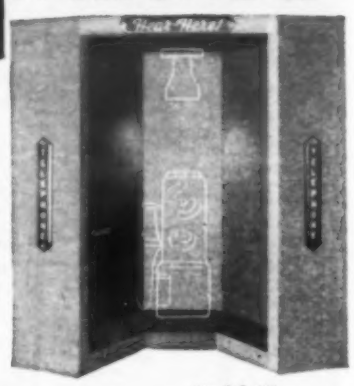
Write for Complete Information

ATLAS INDUSTRIAL CORP.
853 - 39th Street
Brooklyn 32, N. Y.



▲ For more details circle **NED-577 A5** on enclosed inquiry slip ▲

YOU CAN ALWAYS "Hear-Here"



You are actually out of this world in a Burgess-Manning "HEAR - HERE" Booth — you hear every word distinctly regardless of noise around you.

- Air always fresh
- No corners to sweep
- New triangular configuration permits 7 space-saving multi-booth arrangements.
- Sturdy, steel construction
- Beautiful silver-gray hammered finish
- Easily installed — no maintenance

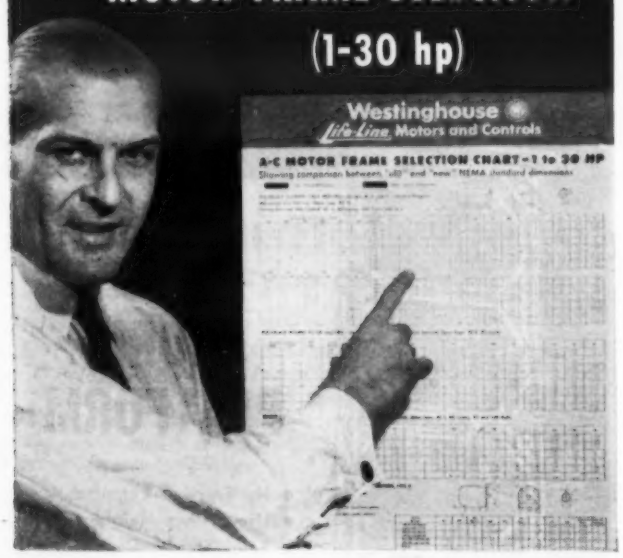
Model 45
35½" wide, 32" deep, 36" high. Price $100.00 f.o.b. Chicago. Light fixture $9.00 extra. Auxiliary floor stand $85.00 extra.

Write for Bulletin A-131 Other Models Available

Architectural Products Division of
BURGESS-MANNING COMPANY
5968 Northwest Highway, Chicago 31, Illinois
Manufacturers of 3-Way Functional Ceilings and Telephone Acousti-Booths

▲ For more details circle NED-578 A5 on enclosed inquiry slip ▲

Free NEW GUIDE TO A-C MOTOR FRAME SELECTION (1-30 hp)



This WALL CHART saves time in comparing old and new NEMA frame dimensions for . . .

- general-purpose a-c motors
- wound-rotor motors
- single-phase motors
- a-c flange-mounted motors

Here's a quick and ready reference to the new NEMA frame number for each type of a-c motor application (1-30 hp). Start with the rpm and horsepower requirements for a motor, then simply follow across this wall chart to locate the correct, new NEMA frame number and all its basic frame dimensions.

In addition, directly above this information are given the standard dimensions for the corresponding old NEMA frame number. Thus, you have a complete selection guide and comparison table in convenient, durable, chart form ready for wall hanging.

J-21783

YOU CAN BE SURE . . . IF IT'S Westinghouse

Westinghouse Electric Corporation
3 Gateway Center, P. O. Box 868
Pittsburgh 30, Pennsylvania

Please send me copies of the Westinghouse A-C Motor Frame Selection Wall Chart—DC 463

Name_____

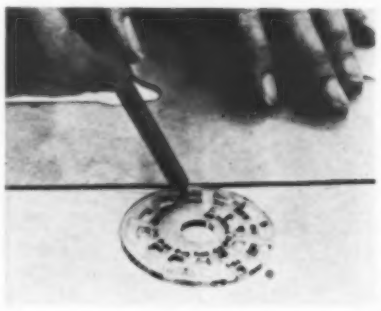
Firm_____

Address_____

City_____ State_____

▲ For more details circle NED-579 A5 on enclosed inquiry slip ▲

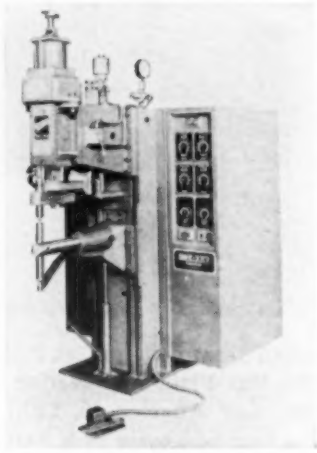
DRAFTING TOOL
spaces lines for letters, layout



Seventeen slots in the Linemaster drafting instrument are used to produce parallel lines 1/64 and 1/32-in. to ½-in. from a base line in steps of 1/32-in. Made of heavy plastic, it makes accurately spaced lines for layout, architectural and engineering drawing, lettering and cross-hatching. Pencil or scriber point is placed in desired slot, all of which are precisely located in relation to circumference of disk to within 0.002-in. of dimension marked on it. In use, the 2¼-in. disk is placed against a straight edge or curve, positioning itself automatically as the line is drawn. Price is $1.00. Made by **DRI-flo**, 644 E. Ten Mile Rd., Hazel Park, Mich.

▲ For more details circle NED-580 A5 on enclosed inquiry slip ▲

SPOT & PROJECTION WELDERS
are air-operated press type units



Production welding of wide range of mild steel, aluminum and light alloys to commercial standards is accomplished with air-operated press type three-phase SPT 2 and EPT 2 spot and projection welders. Both are available in 50, 75, 100 and 150-kva ratings at 50 per cent duty cycle. Model SPT 2 can be supplied with 18 to 48-in. throat depth with electrode force of 2260 to 4000 lb, depending on throat depth. The EPT 2 machine can be supplied with 12 to 30-in. throat depth with electrode force of 3000 to 5000 lb. Made by **Sciaky Bros, Inc.**, 4517 W. 67th St., Chicago 38, Ill.

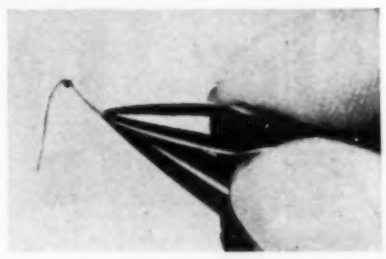
▲ For more details circle NED-581 A5 on enclosed inquiry slip ▲

CAM-ACTION GRINDER DOGS
brass cams and screws now available

In order to protect surface of work, Red-E cam-action grinder dogs are now supplied with brass as well as hardened steel cams and screws. Cams, which are ground smooth for further work protection, are held to work by concealed spring. Dogs save time and labor, on semiautomatics or where there is little traverse feed. Work is merely placed in dog and screws are set. Work is also gripped securely by spring action when cam is released. Sizes are offered to accommodate diameters from ⅛ to 4 in. Made by **Ready Tool Co.**, 554-D Iranistan Ave., Bridgeport 5, Conn.

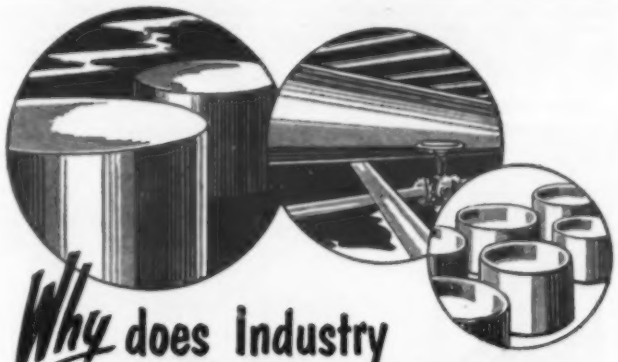
▲ For more details circle NED-582 A5 on enclosed inquiry slip ▲

THERMISTOR
stability good at 400° C



Microscopically small TCA type L 118 thermistor combines high speed response with extreme stability at operating temperatures up to 300° C. At 400° C stability is rated good. Thermistor is a tiny, glass-coated ceramic element with less than 0.0018-in. diameter and with 1-mil diameter platinum alloy leads. Thermal time constant is only 1 second even in still air and even faster in liquids. One milliwatt of electrical power will heat this sensing unit more than 10° C above ambient in still air. Characteristics make thermistor particularly valuable for number of applications such as liquid level detection. Made by **Thermistor Corp. of America**, 200 Durham Ave., Metuchen, N. J.

▲ For more details circle NED-583 A5 on enclosed inquiry slip ▲



Why does Industry buy ALCONOX for ALL Equipment Cleaning Problems?

- Simply because for glass piping systems, tanks, metalware, ball bearing assemblies, kettles and all general industrial equipment Alconox has proven itself time and again the most versatile, safe, efficient multiple cleaning detergent on the market.

If that isn't enough; Alconox will do all of this at a cost of less than 2 cents per gallon.

Literature, samples and the name of your nearest distributor on request.

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WETTING AGENTS DETERGENTS
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AVAILABLE IN
BOX of 3 lb. . . . . $ 1.95
CARTON of 12 boxes of 3 lbs. 10.00
DRUM of 25 lbs. . . . lb. .45
DRUM of 50 lbs. . . . lb. .40
DRUM of 100 lbs. . . lb. .40
DRUM of 300 lbs. . . lb. .37
Slightly higher on Pacific Coast.

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Teamed for Microfilming

speed
accuracy
economy
the new Model 8
Film-a-record
and Automatic
"PB" Feeder Attachment

The revolutionary Film-a-record Model 8 microfilm camera is amazingly compact and versatile. With the new "PB" feeder attachment it *automatically* and *accurately* films all types of records with high speed precision.

The economy and superior microfilming performance of Film-a-record Model 8, PLUS the convenience and never-miss accuracy of automatic "PB" feeding, assures spectacular dollar and space savings with complete record protection.

Send for F382 — a free descriptive brochure.

Remington Rand INC
Room 1165, 315 Fourth Ave., New York 10, N.Y.

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THE ONLY SAFETY SWITCH IN SPECIAL INDUSTRY ENCLOSURE!

NOW- NEMA Type XII

EXTERNAL MOUNTING FEET eliminate need for conventional leaky mounting holes within the enclosure

CAPTIVE SCREWS assure tight cover fit

NEOPRENE GASKET provides positive cover seal

WELDED TIGHT ENCLOSURE without knockouts protects against dirt, dust, oil, and splashing coolant

- This new heavy duty switch, built to NEMA XII specifications, is "tailor-made" for applications requiring protection from dirt, dust, oil and coolant.

Write for Bulletin SD-5. Address Square D Company, 6060 Rivard Street, Detroit 11, Michigan

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

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ELECTRIFY YOUR CRANES AND HOISTS FOR SAFER, MORE DEPENDABLE OPERATION.....

When you power your cranes and hoists with FEEDRAIL TROLLEY BUSWAYS you replace dangerous open wiring and hazardous trailing cables with a safe, efficient electrical distribution system that's tops for dependability. Current-carrying conductors are safely enclosed in steel housings. Power take-off is from smooth rolling trolley outlets. You'll experience fewer electrical accidents — less maintenance — faster more efficient materials handling. *For details, write Dept. D-1.*

Safe electric power where you want it—when you need it for —
Cranes and Hoists
Portable Tools and Machines
Moving Test Lines
Assembly Lines, etc.

ELECTRIC FEEDRAIL®
Never Becomes Obsolete
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FEEDRAIL CORPORATION
Subsidiary of Russell & Stoll Company, Inc.
125 BARCLAY STREET · NEW YORK 7, N. Y.
SPECIALLY QUALIFIED REPRESENTATIVES IN PRINCIPAL CITIES
For more details circle NED-587 A5 on enclosed inquiry slip

NEW Randall BEARING BRACKET

A sturdy, compact, 10-gauge steel bracket bearing, furnished completely assembled ready to mount, or knocked down, as desired. It features the RANDALL "Deep Well" graphited ball assembly contained in a spherical rubber cushion to assure maximum absorption of vibration, quiet operation, and constant controlled self-alignment.

This bracket retains all the outstanding qualities that the name RANDALL implies —sturdy, low cost, quiet operation, easy installation, constant self-alignment, double lubrication, and long life. Furnished in standard shaft sizes, 5/8", 3/4", 15/16", and 1" inclusive. Shaft sizes 1/2", 13/16" and 7/8" can be furnished on special orders in production quantities.

Write today for additional information, or ask your area distributor to show you Randall's complete line.

BRONZE BAR STOCK · BRONZE BUSHINGS · PILLOW BLOCKS · SHEET LUBRICATOR
Randall
GRAPHITED BEARINGS · THRUST WASHERS · SAFETY COLLARS · BRONZE CASTING

RANDALL GRAPHITE BEARINGS, INC.
1007 S. Greenlawn Avenue, Lima, Ohio
For more details circle NED-588 A5 on enclosed inquiry slip

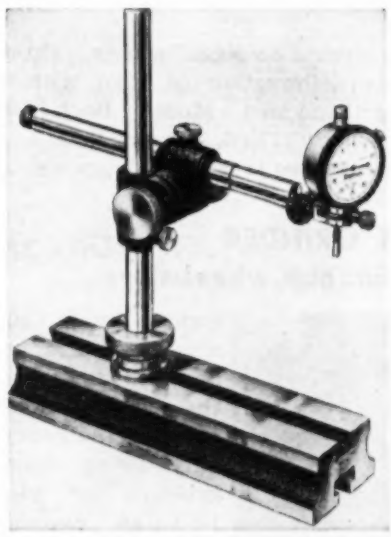
AERIAL PLATFORM
installed on truck, dock or trailer to raise workman to height of 40 ft

Independent source powers hydraulically operated Giraffe aerial platform for use in overhead construction and maintenance. Self-contained unit can be installed on truck, barge, dock, trailer or flatcar. Its two-section boom can put a workman 40 ft into the air. Up to 450 lb can be handled at any radius without outriggers, or 1000 lb with outriggers.

Boom can be power rotated continuously in either direction and two sections can be moved up or down independently or at the same time. Insulation is provided to protect the upper end of boom and platform against 7500 v. Seamless steel tubing is used almost exclusively to carry hydraulic fluid. Foot operated controls are on the working platform. Same power source can be used to operate a compressor or generator for powering tools. Pipe inside the boom transmits air power to platform and a tube serves as an electrical conduit. Made by **Pitman Mfg. Co.,** Room 568, 300 W. 79th Terrace, Kansas City 14, Mo.

For more details circle NED-589 A5 on enclosed inquiry slip

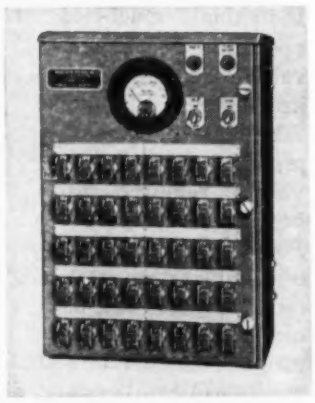
DIAL TEST INDICATOR
for heavy duty applications



Extreme rigidity and universal adjustment to any position are features of No. 675 heavy duty dial test indicator. Cast iron base, with ample weight to support the indicator, measures 3 x 10 in. and has top and bottom faces accurately ground. A T-slot extending entire length of lower face makes possible attachment to machine tables. The 10½ in. upright post has a 0.750-in. diameter. Clamp permits facing the indicator in any direction. Gage rod and indicator can be removed as a unit for clamping on any machine setup. Gage is furnished with No. 25-131 dial indicator, graduated 0.0005-in., dial reading 0-25-0, range 0.125-in., with ¾-in. long contact point. Made by **L. S. Starrett Co.,** Dept. ED, Athol, Mass.

For more details circle NED-590 A5 on enclosed inquiry slip

BEARING TEMPERATURE MONITOR
checks up to 40 points at one time



Bearing temperatures are continuously monitored and automatic alarms are actuated when they rise above safe limits by this fail-safe bearing temperature monitor. Bank of magnetic amplifiers magnify the weak electric output of the thermocouples installed at points to be checked to a level sufficient to actuate an indicator and the alarm system. As many as 40 points can be monitored simultaneously. Instrument operates automatically and warns by audible signal and lamp indication. Open circuits caused by thermocouple or its associated wiring cause the system to alarm immediately. Monitors are custom designed for specific applications. Alarm point is adjustable for each thermocouple. Made by **Bogue Electric Mfg. Co.,** Dept. LS-1, 52 Iowa Ave., Paterson 3, N. J.

For more details circle NED-591 A5 on enclosed inquiry slip

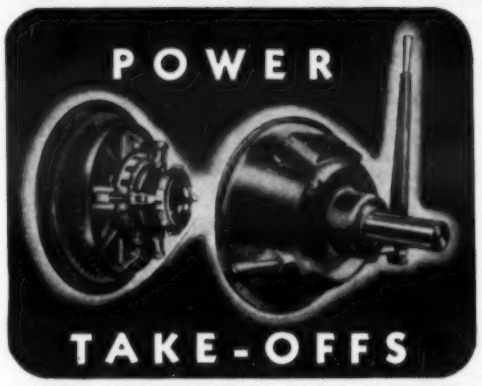
PORTABLE MIXERS
... offer ECONOMY

Operating expenses dip to a new low when you choose Portable Mixers from the complete Eastern Series. Available from 1/20 to 5 H.P. with a variety of speeds and motor enclosures. Your small initial investment pays rich dividends in economy.

For complete mixer selection information write for Eastern Catalog 510-A

Eastern INDUSTRIES, INC.
REGENT ST., E. NORWALK, CONN.
For more details circle NED-592 A5 on enclosed inquiry slip

ROCKFORD



FOR GASOLINE AND DIESEL ENGINE APPLICATION

SELF CONTAINED UNIT · WIDE RANGE OF SIZES · CONSERVATIVE RATING · ROLLER BEARINGS · FINE ADJUSTMENT · ACCURATE BALANCE · S.A.E. DIMENSIONS

The housing supports the drive shaft, which is mounted on a main bearing in the housing and a pilot bearing in the engine flywheel. The heavy-duty clutch is mounted on the drive shaft, which is extended to serve as the output shaft for the external drive, and may carry a pulley, gear, sprocket, or drive through a coupling.

Send for This Handy Bulletin
Shows typical installations of ROCKFORD CLUTCHES and POWER TAKE-OFFS. Contains diagrams of unique applications. Furnishes capacity tables, dimensions and complete specifications.

ROCKFORD CLUTCH DIVISION BORG-WARNER
312 Catherine Street, Rockford, Illinois, U.S.A.

CLUTCHES
For more details circle NED-593 A5 on enclosed inquiry slip

WHEN THREADS HAVE TO BE *Right*...

Detroit thread plug and thread ring gages have long been noted for their high degree of accuracy and long life.

Now, in addition to accuracy and quality, Detroit Tap and Tool can make prompt delivery on Standard American National thread gages as well as on gages for Unified threads, American Standard pipe threads, Aeronautical pipe threads or Dryseal pipe threads.

Many special size thread ring and thread plug gages are also carried in stock for immediate shipment.

See your local Detroit Tap and Tool representative today. Ask for our complete Catalog-Price List (SG-53) covering standard thread gages.

DETROIT TAP & TOOL CO.
8615 E. EIGHT MILE RD. BASELINE, MICHIGAN
For more details circle NED-594 A5 on enclosed inquiry slip

▲ For more details circle NED-596 A5 on enclosed inquiry slip ▲

NOW! 6 ways to get the L-S Truck of your choice

L-S SpaceMaster Model "E" 4000 lb. capacity Electric Fork Truck

Pick out any L-S Master Truck. Put it to work in your plant with a minimum cash outlay by using one of Lewis-Shepard's 6 procurement plans. You can finance it—low down payment . . . low bank interest rates. Or you can lease or rent it—cost of true lease or rental is tax-deductible.

WRITE TODAY. Ask for "L-S 6 Way Procurement Plan" Folder and catalog.

LEWIS-SHEPARD®
171 WALNUT ST., WATERTOWN 72, MASS.
The Master® Line

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— that's all a KEYWAY needs to cost you

With a du Mont *Minute Man* Keyway Broach Kit you can cut a keyway in one minute for as little as a penny apiece. Gears, cutters, pulley hubs, collars, couplings — any bore from ¼" to 3" — any width keyway from 1/16" to 1". Try one — unless you're against saving money!

Now,

GET THIS FOR SQUARE HOLES

Minute Man High Speed Steel Square Broaches finish cast or drilled holes in one pass. *In stock* at your Industrial Distributor's for 1/16" to ¾" squares. Low in cost.

SEE 'EM DEMONSTRATED — Booth No. 496
PLANT MAINTENANCE SHOW — CHICAGO

FOR FREE INFO clip and mail to

The du MONT CORPORATION, Greenfield, Mass.
Send BROACH CATALOG and PRICE LIST D to
Name.....
Company.....
Address.....

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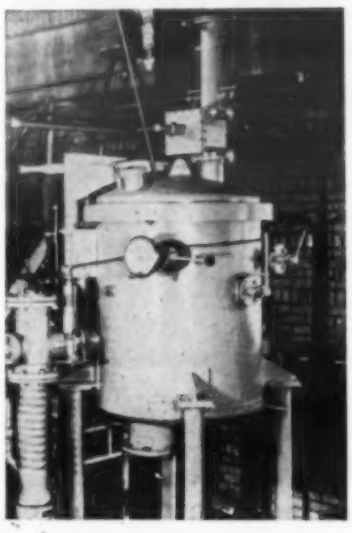
VACUUM FURNACE
is 30-lb induction-heated type



Self-contained, versatile vacuum furnace for research and development purposes is 30-lb induction-heated type available with either a vertical or horizontal shell. A coaxial power feed-through and the means for adding additional charge material or alloying materials during melting without losing vacuum are among unit's features. Photo shows vertical shell type. Made by **Naresco Equipment Corp.**, Dept. NED, 160 Charlemont St., Newton Highlands 61, Mass.

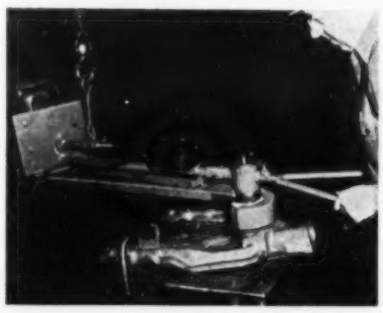
▲ For more details circle NED-599 A5 on enclosed inquiry slip ▲

WIRE CRIMPING TOOL
also cuts, strips and twists

Wire terminals of high mechanical and electrical strength are easily installed on solid or stranded wire by the improved Nycapper, an electrician's hand tool which features Tri-Dent crimping action. Tool can be used for cutting, stripping and twisting of wire and for installing nylon-insulated Nycaps on pigtail splices. Three-way crimp controls deformation of wire without reduction of cross sectional area. Made by **Buck Electrical Mfg. Co.**, P. O. Box 147-96, Roselle, N. J.

▲ For more details circle NED-600 A5 on enclosed inquiry slip ▲

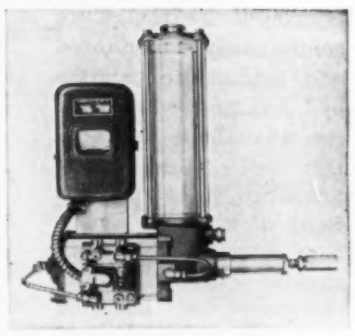
SWING FRAME GRINDER
in 6 and 8-in. cup wheel sizes



Swing frame cup wheel grinders are designed to bridge the gap between portable and heavy-duty swing frame grinders for such jobs as cleaning castings and grinding and blending of welds. No. 16, 2-hp grinder takes 6 x 3 x ⅝-in. nut inserted wheel or 9 x ¼ x ⅞-in. depressed center wheel. No. 18, 3-hp machine accommodates an 8 x 3 x ⅞-in. recess one side wheel as well as the 9 x ¼ x ⅞-in. depressed center type. Made by **Fox Grinders, Inc.**, Dept. B, Oliver Bldg., Pittsburgh 22, Pa.

▲ For more details circle NED-601 A5 on enclosed inquiry slip ▲

CENTRAL LUBRICATION SYSTEM
timed for individual machines



Individual machines operating at varying rates of speed where applications of fluid lubricant at varying predetermined intervals is required can be serviced by the Power-Drive centralized lubrication system. Control can be mechanical, utilizing machine motion to actuate an air valve which cycles the lubrication system, or electrical, utilizing an adjustable time clock to actuate a solenoid air valve which cycles the system at intervals of 7½ minutes to 3 hours. Manual control makes use of an air valve actuated at machine operator's discretion. Automatic safety control stops the machine if air supply to pump fails, lubricant reservoir is empty or lubricant supply line is damaged. Made by **Lincoln Engineering Co.**, Industrial Div., 5782 Natural Bridge Ave., St. Louis 20, Mo.

▲ For more details circle NED-602 A5 on enclosed inquiry slip ▲

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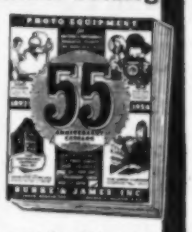

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Handy Pump says:
"Pump liquid materials safely, efficiently, economically with
BLACKMER HAND PUMPS"

Now you can get Blackmer quality in *both* rotary and piston type hand pumps

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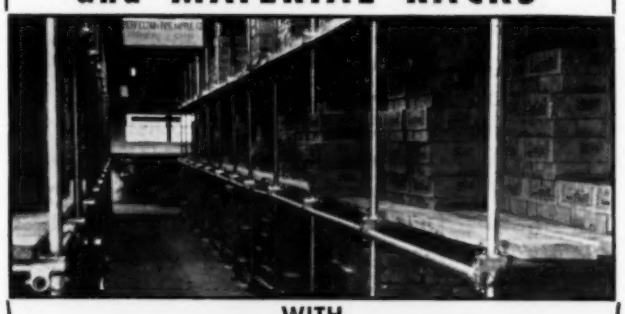
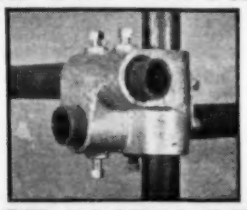
ADJUSTABLE SCAFFOLDS and MATERIAL RACKS



WITH
AMIDON FITTINGS



AND STANDARD PIPE
THE MOST ECONOMICAL
AMIDON ENGINEERING CO.
ELYRIA 20, OHIO

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POWER TOOL?
HEATER?
FAN OR BLOWER?

LAWN TRIMMER? Our "Custom-Built Motor Service" has helped leading manufacturers of grass trimmers *cut costs* and keep sales moving at a *fast clip!* Scruggs Motors were designed to their specs . . . and complete satisfaction.

Sample motor furnished on request. Whatever your fractional horsepower application may be, a versatile Scruggs Universal AC-DC or Shaded Pole AC Motor can be built to *your* specs. Write today for Data and Performance Chart.

You can stake your reputation on Scruggs Motors

THE Loyd Scruggs COMPANY
Festus, Mo.—A Dazey Corporation Subsidiary
MANUFACTURERS OF PRECISION INSTRUMENTS SINCE 1934

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MERRILL MATERIALS HANDLING DEVICES

3-M-2

MERRILL BROTHERS
56-13 ARNOLD AVENUE MASPETH, N. Y.

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a NEW compressor . . .

type PHE

Opposed-cylinder, Balanced design
75 and 100 Horsepower

Package unit . . . Compact, heavy-duty, water-cooled, easy to install . . . single- or multi-stage . . . compressor or vacuum pump.

PHE advanced-design features reduce overall cost of operation and provide a high degree of dependability. Send for Form 3155.

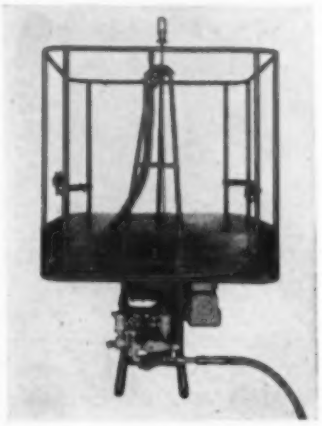
another achievement in electric-driven compressors

by Ingersoll-Rand
11 Broadway, New York 4, N. Y.

1-129

For more details circle NED-608 A5 on enclosed inquiry slip

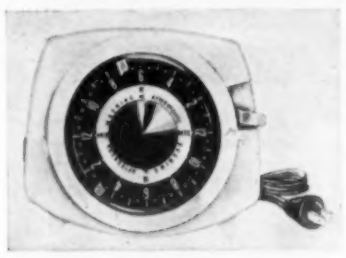
BASKET TYPE WALL CLIMBER
carries 400-lb payload at 20 fpm



Both air and electric operated models of the basket type wall climber weigh 175 lb, have 150-ft lift at 20 fpm and carry payload of 400 lb. Unit has detachable basket and adjustable wall bumpers. Electric model is powered by ½-hp G-E weatherproof motor with Stearns enclosed solenoid operated brake. Double - reduction worm gear is directly connected to motor. Cable drum is grooved to lay properly the second and consecutive layers of 5/16-in. wire rope. Centrifugal brake in drum and an overload switch that cuts off electric power to motor are safety features. Lever control and motor are wired for dynamic braking and instantaneous reversing of motor. Made by **Albina Engine & Machine Works,** 2101 N. Albina Ave., Portland 12, Oreg.

For more details circle NED-609 A5 on enclosed inquiry slip

AUTOMATIC TIMER
7-amp unit handles up to 875 w



Once the Time-All 24-hour repeat cycle timer has been set, it operates automatically daily without resetting. Manual control-equipped unit measures 2½ x 5 x 4 in. and has a Gray Plaskon case and 6-ft cord. Minimum on or off time is 1 hour and maximum is 23 hours. Previously announced model A-211 which will carry 1650 w (15 amp) is also available. Made by **International Register Co.,** 2624 W. Washington Blvd., Chicago 12, Ill.

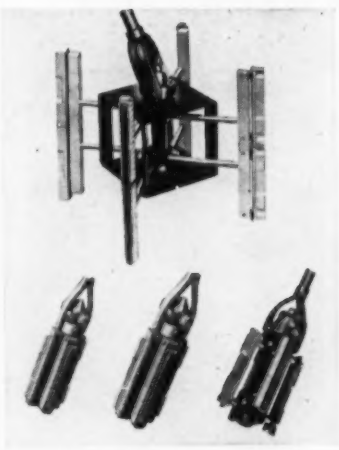
For more details circle NED-610 A5 on enclosed inquiry slip

PACKAGED FILTER
handles 9000 gph of water

Consisting of model 2-C Rumaco bronze pump, model 3-AX-3 Cuno filter and necessary fittings, this packaged filtration unit will handle up to 9000 gallons of water per hour. Power is supplied by 1½-hp, 3450-rpm motor which can be supplied for operation on any specified electric current. Skid type mount facilitates movement to any desired location. Made by **Ruthman Machinery Co.,** 1810 Reading Rd., Cincinnati 2, O.

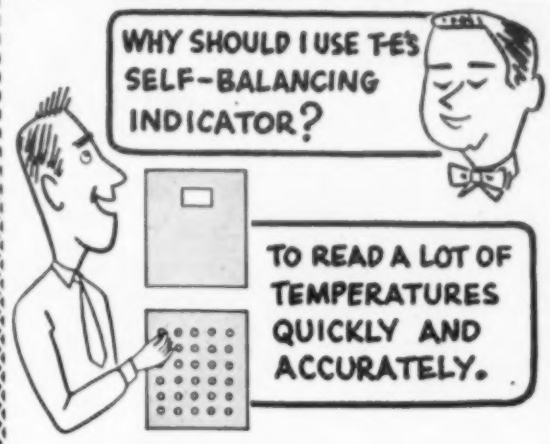
For more details circle NED-611 A5 on enclosed inquiry slip

PORTABLE CYLINDER HONES
in sizes from 1¾ to 20½ in.



Typical applications for line of portable hones vary from cylinders in small motors and compressors to large punch press bearings honed in tandem. Sizes range from 1¾ to 20½ in. Hones can be used either vertically or horizontally. Usually, equipment need not be dismantled when hones are used, because power is applied through free floating type universal joint and can thus be at an angle to the axis to the work. Individual hones and their ranges are: SN-75, 1.75 to 2.0 in.; JN-95, 2.0 to 2.6 in.; AN-112, 2½ to 7 in.; and AN-812, 4¾ to 20½ in. Made by **Sunnen Products Co.,** 7905 Manchester Ave., St. Louis 17, Mo.

For more details circle NED-612 A5 on enclosed inquiry slip



Facts about the indicator: (1) Can be connected to several hundred thermocouples or resistance bulbs through connector panels, toggle switches or rotary switches, (2) 34" scale is easy to read, (3) full scale travel only 4 seconds, (4) 23 ranges from −320° to +200°F all the way up to 0 to 3000°F, (5) accurate, (6) sensitive and (7) durable.

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Thermo Electric Co., Inc.
SADDLE RIVER TOWNSHIP, Rochelle Park P.O., NEW JERSEY
CANADA • THERMO ELECTRIC (Canada) Ltd., BRAMPTON, ONT.

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GRIPPER
WOVEN WIRE
SLINGS
FOR EASIER AND SAFER

handling

or processing

EXTRA BROAD bearing surface gives greater strength, stability and maneuverability . . . even while moving heavy, bulky loads from point to point or through processing operations. Use either BASKET or CHOKE HITCH.

ONE MAN can fasten the load and operate the hoist. No fighting with kinks or tangles. No dangerous whipping or snarling of loose ends. Smooth woven wire construction eliminates sharp loose strands.

COMPLETE FLEXIBILITY gives greater gripping power around even the smallest loads . . . lets you store Gripper Slings in compact coils or hang them perfectly flat on the wall. All-metal construction means long life, freedom from damage even by sharp edged loads.

AVAILABLE in standard lengths and widths, capacities up to 100,000 lbs. Special sizes on request. Every sling PRETESTED to meet loading specifications.

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NATIONAL ELECTRIC

E. M. T. FITTINGS

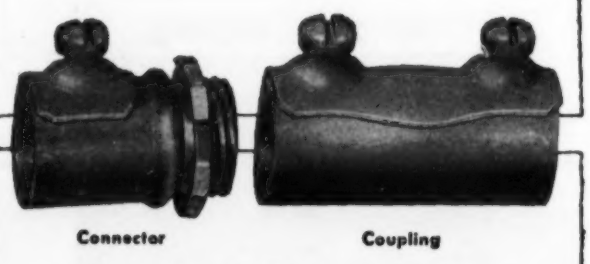
ARE

Vibration-proof

AND

EASY TO INSTALL

IN CLOSE QUARTERS



Connector Coupling

A screwdriver is all you need to install these simplified one-piece, pressed-steel connectors and couplings (½" and ¾" sizes). Steel overlap at screw increases pressure—assures close, accurate fit—makes NE Fittings vibration-proof!

LOOK AT THESE ENGINEERED FEATURES

Easy to inspect.
Permanent ground.
Close, accurate fit.
Electro-galvanized throughout.
Uniform, safe holding action.
No wrench strains on boxes.

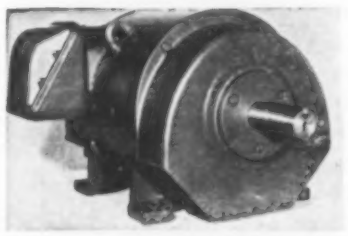
Listed by Underwriters' Laboratories, Inc.
Sold through leading electrical wholesalers.

EVERYTHING IN WIRING POINTS TO

National Electric Products
GATEWAY CENTER
PITTSBURGH 22, PA.

▲ For more details circle NED-616 A5 on enclosed inquiry slip ▲

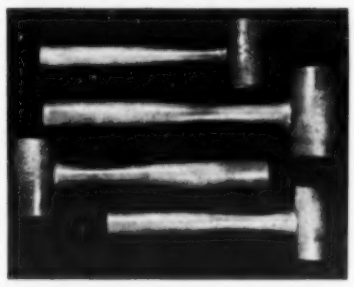
DIRECT-CURRENT MOTORS
sizes range from 20 to 100 hp



Because of their fast, accurate response, Super T direct-current motors are particularly suited for high-speed synchronized drives. They feature fast acceleration and deceleration, smooth shockless starting and stopping, and split-second timing. Exemplary of the Dynamic Response built into these motors is 250-hp drive in a steel mill which operates flying shear to cut bar stock traveling at 2200 fpm into 81-ft lengths accurately within ½-in. tolerance. This motor is accelerated to a precise speed, stopped and repositioned in 1.7 seconds. Acceleration to full speed is reported to be performed in half the time required by previous motors. Super T motors are now being made in 20 to 100-hp sizes, and this range will be expanded to both higher and lower horsepowers. Made by **Reliance Electric & Engineering Co.,** 1082 Ivanhoe Rd., Cleveland 10, O.

▲ For more details circle NED-617 A5 on enclosed inquiry slip ▲

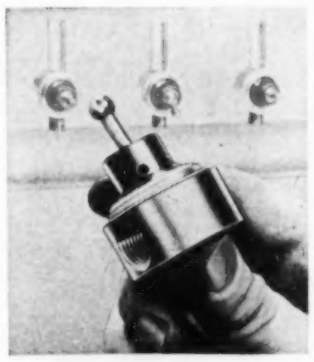
NONMARKING HAMMER
made of aluminum with soft face



Cast with a knurled handle that will not snap or break, line of high strength aluminum alloy industrial hammers will not mark machines or machine parts. Head with soft face and handle are in one piece. Hammers weigh 1, 1½, 2 and 3 lb, are 9⅛ to 12 in. long and have 1¼, 1⅞, 2 and 2½-in. diameter faces. Made by **Savoy Products Co.,** Dept. C. S., 41 Oviatt St., Hudson, O.

▲ For more details circle NED-618 A5 on enclosed inquiry slip ▲

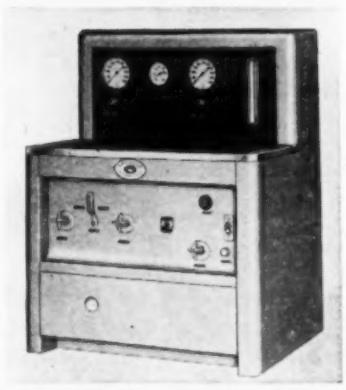
TOGGLE-ACTUATED VALVE
four body metals offered



Bronze, aluminum, steel or stainless steel body with neoprene diaphragm comprise this toggle-actuated Demi valve. Bonnets can be furnished as shown in photo or threaded on the outside for panel mounting. Model TV-3 is a three-way valve with a vent to the atmosphere. Toggle is made of hard chrome plated case hardened steel. Bonnets may be anodized in various colors for coding purposes. Valves are 1½ in. OD, 2 in. high and are being used on up to 200 psi air. They have been tested on air up to 500 psi. Made by **George W. Dahl Co.,** 432 High St., Bristol, R. I.

▲ For more details circle NED-619 A5 on enclosed inquiry slip ▲

HYDRAULIC TEST STAND
pressures to 3000 psi, flow to 6 gpm



Design features found in larger Sprague units are retained in lower cost model S-1000 - 603 hydraulic test stand which operates at pressures to 3000 psi and flows to 6 gpm. Unit is self-contained in heavy gage steel welded cabinet and is equipped with all necessary instrumentation and controls, including flow control valve, flowmeter and oil cooling circuit. Features include location of controls in front for easy reach, the toe-under front base panel and pressure outlets located at forward part of tray. The latter point in, away from operator. Made by **Sprague Engineering Corp.,** 1146 W. 135th St., Gardena, Calif.

▲ For more details circle NED-620 A5 on enclosed inquiry slip ▲

Precise

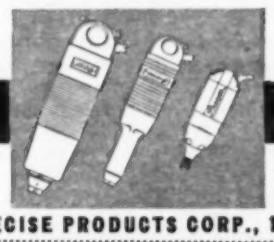
LOWEST COST PRECISION

UP TO 45,000 R.P.M. AND ¼ H. P.

ON AC/DC FOR TOOLROOM AND PRODUCTION

Only PRECISE has the speed, power and precision needed to turn *Tungsten Carbide Mills* as well as all other rotary tools with shank diameters to ¼". Grind, mill, finish, polish any material from wood to the hardest alloy steel. MODELS SUPER 30 and SUPER 40 are for hand applications or machine set-ups; PRECISE SUPER 50 is for heavy duty in machine set-ups. Precision quills and chucks; lifetime-lubricated, micro-precision bearings; machined metal housings. Mounts and accessories for each model extend versatility on standard machine tools.

SUPER 50 POWER QUILL



Three PRECISE Models for Today's High-Speed Tools and Techniques.

Call Your Industrial Distributor or Write for Catalog.

PRECISE PRODUCTS CORP., 1346 Clark St., Racine, Wis.

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IS YOUR ARC WELDING *CURRENTLY ANEMIC?*

Is your arc current *starved* due to poor connections at lugs, quick connectors, grounds and in holders?

Do your operators have to stop occasionally to cool off electrode holders due to *hot handles* caused by poor connections or use *two holders* where one should do the job?

Does your weld quality suffer due to volt and amperage variations during the welding cycle?

You can eliminate these troubles. Just specify CADDY Accessories and cable splices using 100% solid copper CADWELD connections throughout.

CADDY alone gives you a 100% Copper Circuit from the power line through the welding machine *right* to the electrode.

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ARC WELDING ACCESSORY DIV.
ERICO PRODUCTS, INC.
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You can provide easy mobility to a variety of industrial products with

IRONBOUND ALL-PURPOSE HANDLING UNITS . . .

POPULAR IRONBOUND

FLO TRUK

● An easy to handle ruggedly constructed unit for carrying bulky and heavy loads at lowest cost. Seven standard sizes with one or two push handles makes it easy to select the proper truck for your requirements. Ask an Ironbound engineer for suggestions.

The HANDY for furniture and similar items.

The HAULER for cases, crates, tote boxes, etc.

The HUSKY for general use throughout the plant.

THE IRONBOUND "SAFETY-SKID" WITH ROUND CORNERS

Ironbound construction assures long hard use with complete safety to product and operator. Still the time proven method for handling of materials efficiently and economically.

IRONBOUND
BOX & LUMBER COMPANY
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MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

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BUCKET ELEVATORS

Jeffrey Vertically-Encased, Super-Capacity Bucket Elevator in a large stone quarry. For complete information on all types of Bucket Elevators, send for Catalog 850.

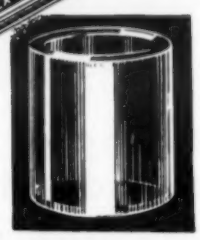
THE JEFFREY MANUFACTURING CO.
Columbus 16, Ohio

IF IT'S MINED, PROCESSED OR MOVED ...IT'S A JOB FOR JEFFREY!

sales offices and distributors in principal cities

For more details circle NED-624 A5 on enclosed inquiry slip

PYREX



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furnished in any length or finish

● For fast service on Pyrex Tubular Gauge Glass, contact Swift! We can supply Tubular Gauge Glass or Cylinders from stock in any length or finish . . . 2 mm. O.D. to 7" O.D. . . . for chemical, pharmaceutical or industrial applications. Write, wire or phone for immediate delivery.

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330 Tenth St., San Francisco 3 ● 140 Boylston St., Boston 16
807 Mateo St., Los Angeles.

For more details circle NED-625 A5 on enclosed inquiry slip

ALL STEEL CONSTRUCTION
rugged, dependable
SPACE SAVING CYLINDERS
for better design

ONE WEEK DELIVERY

CARTER

You get these features

- Full 1 to 1 cartridge rod bearings
- Key type stainless steel lock ring
- Cup or piston ring construction
- Self-adjusting spring loaded packing
- Heavy wall tubing . . . 6 to 1 safety factor
- 40% less mounting space
- Cylinders with built in valves

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The most compact, powerful, dependable and efficient cylinders available. Any product is better and easier to maintain if it's Carter equipped. No matter what your application, there is a Carter cylinder to fit your product. Call us in today. You'll be glad you did.

ALL NEW LOW COST CLAMP CYLINDER
Write For Details

SEND FOR COMPLETE CATALOG FILE

Carter Controls, inc.
2876 BERNICE ROAD, LANSING, ILLINOIS
PHONE 1305

For more details circle NED-626 A5 on enclosed inquiry slip

CIRCULAR SAW BLADE
has chromium-impregnated teeth

Low coefficient of friction for cool operation, fast cutting action and resistance to abrasion are features of Tuff-Tooth circular saw blades. They are chromium impregnated by an electrolytic process for long life between sharpenings. Usable for cutting wood, plywood, Masonite and plastic, blades are available in complete range of standard sizes, arbored for all popular makes of saws. Distributed by **Price & Rutzebeck,** P. O. Box 30, Hayward 79, Calif.

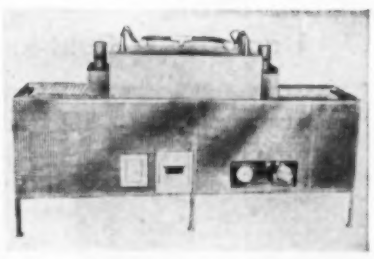
For more details circle NED-627 A5 on enclosed inquiry slip

BLUEPRINT READING STAND
drawings are secured by magnets

Drawings ranging up to 24 x 40½ in. are held in easy-to-read position by this metal blueprint reading stand. It has 6-ft stand, or it can be wall-hung by means of a detachable easel. Usable anywhere, easel swings 360 degrees and tilts 25 degrees. Prints are secured in place by six magnetized blocks. Easel and support can be lifted from base for portability. Assembly can be taken down for compact storage on a hook. Made by **Young Radiator Co.,** 729 Marquette St., Racine, Wis.

For more details circle NED-628 A5 on enclosed inquiry slip

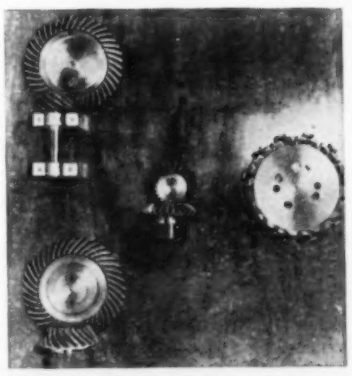
PRODUCTION SOLDERING OVEN
utilizes far-infrared heaters



Fast warm-up and uniform heat distribution are characteristics of far-infrared electric radiant heaters in this continuous production soldering oven. Stainless steel conveyor belt with five speeds passes work through the oven under the high intensity radiation heaters. Work comes out soldered. Three 1100-w Chromalox heaters give a density of 40 w per square inch. Distance from work to heaters can be varied by changing elevation of heaters. Four on-off heaters with 15-amp magnetic circuit breakers control the three heaters and the ¼-hp conveyor drive motor. Each can be operated individually. Made by Livingston Electronic Corp. for **Electrical Industries,** 44 Summer Ave., Newark 4, N. J.

For more details circle NED-629 A5 on enclosed inquiry slip

BEVEL GEAR CUTTING METHOD
adaptable to small-lot production



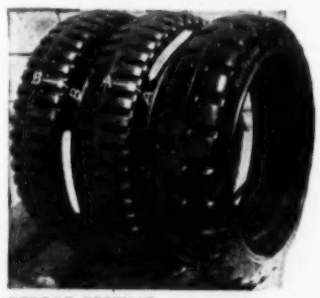
Wide variety of spiral bevel, Zerol bevel and hypoid gears can be produced with a single cutter by the Unitool method. Particularly suited to cutting gears in small-lot quantities with minimum of capital outlay and without specially trained personnel, method is useful for small gear shops and experimental work. System is designed for use with Gleason No. 106 and 116 hypoid generators. Same cutter is used for both members of the pair of gears. Segmental type cutters require no shimming or adjusting. Combined range of the two machines is covered by six cutters which overlap in range. Developed by **Gleason Works,** 1006 University Ave., Rochester 3, N. Y.

For more details circle NED-630 A5 on enclosed inquiry slip

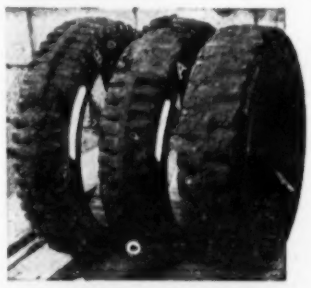
CAM TOOL CO., INC. 11 RANDWICK AVE. OAKLAND 11, CALIF.

For more details circle NED-631 A5 on enclosed inquiry slip

MONARCH *Mono-Cushions®*
WEAR BETTER . . . LAST LONGER



BEFORE TESTING . . . a Mono-Cushion and two competitive 22x6x16 tires looked almost identical.



AFTER TESTING . . . the difference was obvious. Only the Mono-Cushion still had a useful service life.

Here is important information for lift truck users who want to reduce replacement tire costs.

Knowing that proof of performance means more than claims, Monarch has devised severe fatigue tests that simulate actual operating conditions. These tests are used continually to determine comparative resistance of standard pressed-on solid tires to cutting, chipping and wear.

We are proud to report that Monarch Mono-Cushion tires molded from new COMPOUND T-48C have outlasted competitive lift truck tires in all recent tests. This means you can rely on all Monarch tires to give longer service life . . . cut replacement costs.

For the detailed story of why Monarch tires wear better and last longer, WRITE TODAY FOR YOUR FREE COPY OF NEW BULLETIN TD-200.

6081-MR

THE MONARCH RUBBER COMPANY

260 Lincoln Park • Hartville, O. • 7-255 General Motors Bldg., Detroit 2, Mich.

For more details circle NED-632 A5 on enclosed inquiry slip

NEVER BEFORE—such high capacity, trouble free AIR PUMPS *in such small space!*

LEIMAN INTEGRAL AIR PUMP and MOTOR

28" Hg. Continuous Vacuum
20 lbs. Pressure

The new Leiman Integral Rotary Air Pumps permit more compact design, plus the famous "lifetime" Leiman performance for your packaging, printing, feeding office, milking, feeding, aerating, chucking and other equipment. Features include steel blades with automatic wing adjuster—noiseless rubber mounting—ball bearings—fan cooling—automatic oiling—oil-free air—automatic thermal motor overload protection. Get full details.

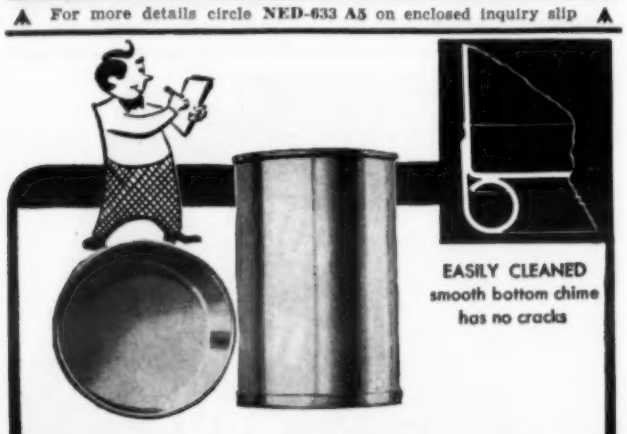
MODEL K
3.6 c.f.m. displacement
13½" long—12" wide
7" high

MODEL K-3
7.2 c.f.m. displacement
18½" long—15" wide
7" high

LEIMAN BROS., Inc.
167 Christie St., Newark 5, N. J.

WRITE for folder and prices giving full details. Also get 16-page catalog showing other types and sizes.

For more details circle NED-633 A5 on enclosed inquiry slip



Compare the Advantages...

...of using Hackney Stainless Steel Containers for batch mixing and in-plant handling: swift, easy cleaning—no product contamination—long useful life.

Compare the cost of cleaning Hackney Containers that have the pressed out *seamless* type bottom—(no crevice). Cost records often show it's more economical to use durable, easy-to-clean Hackney Containers of Stainless Steel.

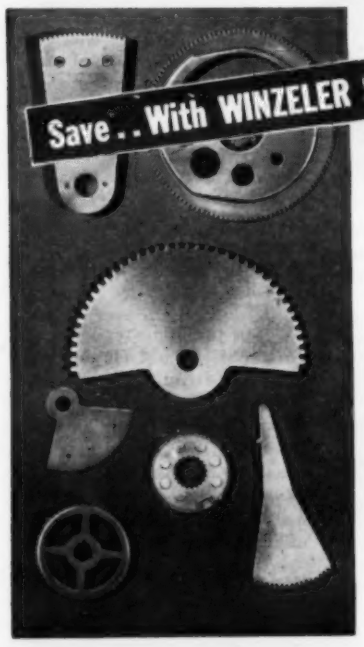
Available in standard sizes of 20, 30, 50 and 55 gallons. Or write for information on other sizes.

Hackney MILWAUKEE

Pressed Steel Tank Company
Manufacturer of Hackney Products
1450 S. 66th St., Milwaukee 14, Wis.

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

For more details circle NED-634 A5 on enclosed inquiry slip



Save.. With WINZELER Stamped Gears..

Designed And Tooled For Your Specific Needs!

More and more manufacturers are saving assembly time and money with Winzeler *Special* Stamped Gears. They are getting valuable aid in designing more efficient and economical stamped gearing for many *unusual* applications. Skillful tooling, stamping and assembling assures uniform accuracy in mass production runs. Many stock dies available. Investigate this better stamped gear service!

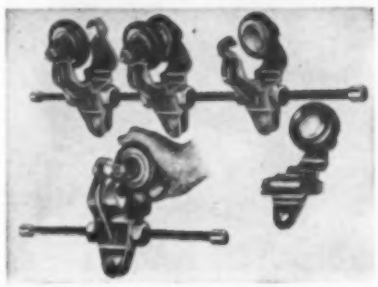
WRITE FOR FREE *4-page catalog-folder describing our facilities and the various Stamped Gears, Tools and Assemblies we make. Valuable gear data and tables are included. Or, get ideas, samples and low cost estimates. No obligation.*

WINZELER Stamped Gears

WINZELER MANUFACTURING & TOOL CO.
1712 WEST ARCADE PLACE, CHICAGO 12, ILLINOIS

For more details circle NED-635 A5 on enclosed inquiry slip

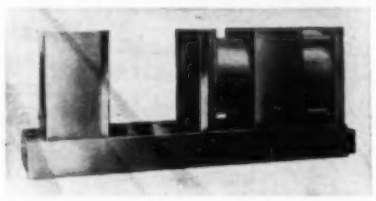
CABLE CONVEYOR BRACKET
features removable wheel



Bracket for installation on Cable-Link overhead conveyor systems makes it possible to remove and change wheels without dismantling or removing the trolley from the monorail. "Hook" design of the bracket arm makes it possible to remove the wheel by loosening the retaining nut on the wheel. Once the nut is tightened, the wheel remains securely in the proper position, regardless of conveyor travel speed, suspended load or pull load. Bracket and trolley assembly can withstand eight and one-half times maximum load per station. Made by **American Cable-Link Co.**, Dept. Z, 13446 Fenkell Ave., Detroit 27, Mich.

For more details circle NED-636 A5 on enclosed inquiry slip

CLAMPING DEVICE
air-powered unit has 6 x 6-in. jaws



Jaws measuring 6 x 6 in. and backed with 4¾-in. diameter push rod make model 663 V-Speed Autovise an exceptionally rigid air-powered clamping device. It can be used in any position in milling, drilling and tapping, or is suitable as a bench type platen press. Jaws open to 8 in. on standard units. Unit is powered by spring-return air cylinder with 19:1 ratio on any line pressure to 150 psi and has 3-in. air stroke. Stationary jaw is adjustable to three positions for holding materials up to 8 in. wide. Jaw faces are removable and can be drilled for attaching fixtures and dies. Made by **Van Products Co.**, 5766 Old Ridge Rd., Swanville, Erie 7, Pa.

For more details circle NED-637 A5 on enclosed inquiry slip

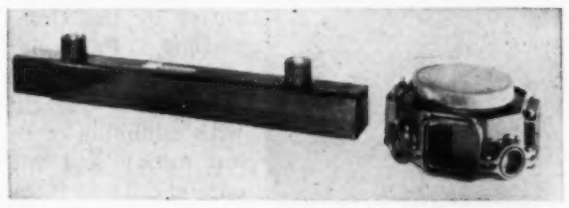
LIQUID DRUM
1-gal size is tight-head type

Available with either standard interior coating or a Hi-Bake lining for dangerous or hard to hold products, Vulcan 1-gallon tight-head drum is adaptable for shipment of all types of liquids. This standard ICC-17E container is round in shape with welded side seams and double seamed ends. Top is necked for stable stacking. Can has a carrying handle and recessed 45-mm screw cap. Pouring spouts of plastic or metal are available. Made by **Vulcan Stamping & Mfg. Co.**, P. O. Box 161, Bellwood, Ill.

For more details circle NED-638 A5 on enclosed inquiry slip

ELECTRICAL RACEWAY
large capacity underfloor type

Fourteen-gage rolled steel electrical raceway with a 4 x 4-in. cross section is available for heavy duty underfloor wiring in industrial plants. It has more



than three times the capacity of standard underfloor duct. Corrosion protection is furnished by Sherardizing galvanizing process and acid-resistant clear enamel on interior and exterior surfaces. Raceway is furnished in 10-ft lengths with 2-in. pipe size threaded outlets on 24-in. centers. It is fully grounded, UL-listed and available with junction boxes and complement of fittings. Made by **National Electric Products Corp.**, 2 Gateway Center, Pittsburgh 22, Pa.

For more details circle NED-639 A5 on enclosed inquiry slip

Amazing New Chemical Treatment Prevents Rust Without Oil

Newly-developed "Hydrin," dissolved in water, chemically prevents rust during in-plant operations . . . during and after rinsing . . . prior to painting or packaging. No oiling is necessary. Surfaces may be painted or further rustproofed following the "Hydrin" treatment. "Hydrin" is also especially desirable for inhibiting water used for hydrostatic testing of pumps, tanks, radiators, etc. "Hydrin" will provide interim protection for metal surfaces at a cost of only pennies per gallon.

Write for complete information about "Hydrin." Address Rust Prevention Engineering Service, Nox-Rust, Department NE-15, 333 North Michigan Avenue, Chicago 1, Ill.

*Pat. applied for

America's Leading Manufacturer of Scientific Rust-Preventive Products

DAUBERT CHEMICAL COMPANY
333 North Michigan Avenue, Chicago 1, Illinois
Offices in Principal Cities

For more details circle NED-640 A5 on enclosed inquiry slip

for the first time

a single cylinder for air operation or standard 1000 P.S.I. oil service

Complies with BOTH J. I. C. Pneumatic and J. I. C. Hydraulic Standards!

- New Series "S" Hydro-Line Cylinders
- 95% efficient at 100 PSI air pressure
- 98% efficient at 1,000 PSI oil pressure
- The standard Automation Cylinder of the Automotive Industry
- Compact, flexible design
- Advanced design of cushions in the Series "S" make it possible to use the full stroke on these cylinders at higher speeds and loads than the conventional type.

Write today for FREE catalog

hydro-line *Manufacturing Co.*
5601 PIKE ROAD • ROCKFORD, ILLINOIS

For more details circle NED-641 A5 on enclosed inquiry slip

Speed Nuts® ...proved cost-savers on assembly lines throughout industry

"U" and "J" Type SPEED NUTS are self-retaining; hold a constant hole alignment, and will not vibrate loose. They are made of highest quality spring steel in a wide variety of standard and special sizes. "U" and "J" Types are only two of thousands developed by Tinnerman Engineers to cut fastening costs. Ask your Tinnerman Representative, or write us direct for a FREE "Fastening Analysis."

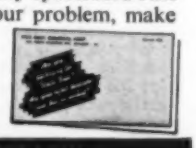
TINNERMAN PRODUCTS, INC.
Dept. 12, Box 6688, Cleveland 1, Ohio

For more details circle NED-642 A5 on enclosed inquiry slip

Nox-Rust 366 Amber Protects $15,000 Machine at Cost of 25¢

Just painting on 25¢ worth of Nox-Rust 366 Amber prevents rust on parts or machines, protecting them in shipment or outdoor storage for a year or more—three years indoors. It's easy to apply; dries quickly to a thin, wax-like amber coating. Provides superior protection against salt air, industrial fumes, humidity. And it's easy to remove.

Nox-Rust 366 Amber is just one of many specialized rust preventives we make. Let us analyze your problem, make a Rust-Prevention Engineering Survey. No obligation. Write for details and free Rust-Preventive Use Chart. Address Dept. NE- 15.



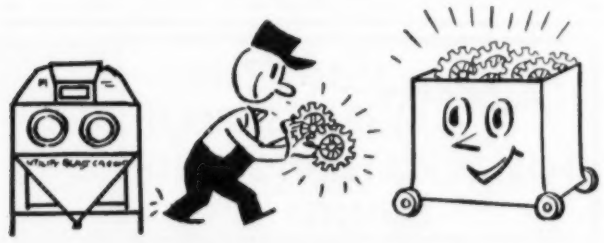
DAUBERT CHEMICAL COMPANY
333 North Michigan Avenue, Chicago 1, Illinois
Offices in Principal Cities

▲ For more details circle **NED-643 A5** on enclosed inquiry slip ▲

PANGBORN BLASTS *by don herold*

When those small metal parts call out, "Hey, cleaning time!" And you have to remove scale, old paint, rust or grime . . .

You can clean them in seconds and save money, too—Pangborn's Blast Cleaning Cabinet's made just for you.



It produces a finish so smooth and so clean, It will do the best job that you ever have seen.

Pangborn Blast Cleaning Cabinet

for efficient, low-cost cleaning of metal parts. Cleans pieces up to 35" x 60" in size. Models from $319 and up.

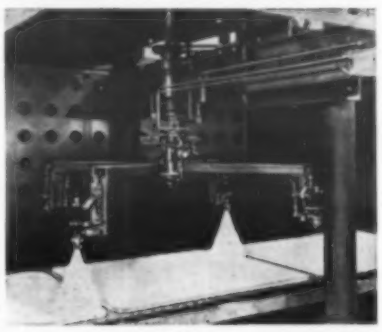
For details, write:
PANGBORN CORP., 2400 Pangborn Blvd., Hagerstown, Md.

Pangborn

BLAST CLEANS CHEAPER with the right equipment for every job

▲ For more details circle **NED-644 A5** on enclosed inquiry slip ▲

AUTOMATIC SPRAY PAINTER uniformly finishes flat products



Coatings of controllable thicknesses are applied automatically to flat products at conveyor speeds up to 100 feet per minute with this Rotary Spray Painting outfit. Four rotating arms, each mounting an automatic spray gun, are mounted on revolving spindle. Guns travel in circular path above the conveyor, and diameter of circle of gun travel is 24-in. wider than maximum width of ware to be sprayed. Guns operate only when they are over the ware, control being fully automatic. Amount of finish applied to surface is controlled closely by varying the speed of the rotary head. Overspray is held to minimum. Made by **Binks Mfg. Co.**, Dept. NED, 3122 Carroll Ave., Chicago 12, Ill.

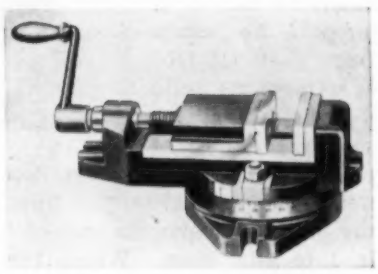
▲ For more details circle **NED-645 A5** on enclosed inquiry slip ▲

CUTTING & GOUGING TORCH is low-cost light-duty tool

Small in size and designed for light work, model G-2 cutting and gouging torch uses up to ¼-in. electrodes. It operates from direct current welding machine and a compressed air line. Tool is usable for removing defects in castings; grooving and cutting mild, stainless and alloy steels as well as nonferrous materials; and for similar work. Rotating nozzle permits changing electrode angle to suit work while maintaining alignment of air jet. Air and current are brought to torch by flexible, concentric cable. Made by **Arcair Co.**, 423-A S. Mt. Pleasant Ave., Lancaster, O.

▲ For more details circle **NED-646 A5** on enclosed inquiry slip ▲

SCREW SWIVEL VISE for milling machines, drill presses



This screw swivel vise for milling machines, shapers and drill presses has covers that prevent chips from falling into swivel slides. Other advantages include hardened and ground removable jaws, semisteel castings used in body construction, graduated swivel base, keyways in body and swivel base to allow use with or without base and body parallel and square to keyways. Available jaw dimensions are 4 x 1½ in. with 3-in. maximum opening and 6 x 2¼ in. with 5¾-in. opening. Keyways are ⅝-in. wide and ⅛-in. deep. Made by **Nelco Tool Co.**, Modern Tools Div., Dept. 4, Berlin, Conn.

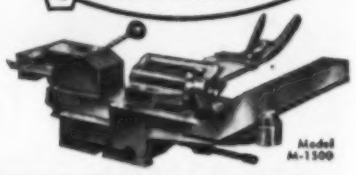
▲ For more details circle **NED-647 A5** on enclosed inquiry slip ▲

PAINT ROLLER KIT has extension pole for ceiling work

All tools required for painting ceilings, walls or floors without using a ladder are contained in No. 9-LKP paint roller kit. Aluminum frame has "flip-lock" for instant slip-off of rollers and threaded hand grip which accommodates included three-piece 42-in. extension pole. The 9-in. roller is Dynel covered, with wool or mohair available on order. Seamless, rustproof deep-well paint tray measures 11 x 15 in. and has folding ladder-grip legs. Kit also includes Mix 'n Clean tool for mixing paint and cleaning rollers. Made by **American Products Co.**, 3306 Edson Ave., New York 69, N. Y.

▲ For more details circle **NED-648 A5** on enclosed inquiry slip ▲

Time and money saver for short or production runs —on any metal



PROVEN IN SHOPS OF EVERY SIZE

See our catalog and engineering sheets illustrating unlimited variety of turning, facing, boring, grinding and Bullard operations performed quickly and accurately with this low cost tool. No complicated hydraulic or electronic controls. Requires no permanent lathe alterations. Uses simple, easily made templates. Models to fit lathes 9" to 24" and larger.

AIR CONTROL DIVISION OF
Lehigh Foundries, Inc.
1503 LEHIGH DRIVE, EASTON, PA.
Mfrs. of LEHIGH Air Valves, Air Cylinders, Air Hoists, Air Motors
West Coast Distributor: CAMPBELL CONTOUR ATTACHMENT CO. 1320 W. Esther Street, Long Beach, Cal.

▲ For more details circle **NED-649 A5** on enclosed inquiry slip ▲

OPW swing joints

3400 Series, Bronze
4400 Series, Steel

SWING YOUR PRODUCT INTO LINE . . . CONTAMINATION FREE*
*product never enters ball bearing chamber

- UNLIMITED FLOW LINE FLEXIBILITY
- GREATER LOAD CARRYING CAPACITY

The high standard of OPW's Swing Joint performance results from expert designing, precision machining, simple lubrication requirements, soundness of load carrying principle and perfect alignment at all times.

A wide range of styles makes possible many and varied applications for safely handling liquids of diversified viscosity at required temperatures and working pressures.

Write for Catalog F-8 for application, construction details and engineering data.

OPW CORPORATION
2729 COLERAIN AVENUE • CINCINNATI 25, OHIO

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Added Evidence that . . .

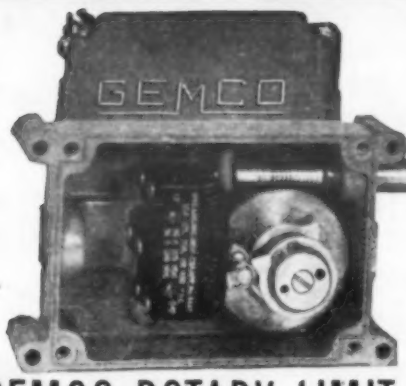
Everyone Can Count on VEEDER-ROOT

In figuring out new systems of automatic electrical control, Veeder-Root *Count*rol can supply vital connecting links. For instance, this Predetermining Counter can be hooked into such a system to light a light, ring a bell, or actuate a mechanism to stop a machine or process *at any pre-set point.* And there are many other Veeder-Root Counters that can serve as "countponents" in almost any way desired. Or special counters can be designed for specific applications.

VEEDER-ROOT INCORPORATED
Hartford 2, Connecticut
"The Name That Counts"

▲ For more details circle **NED-651 A5** on enclosed inquiry slip ▲

WHAT'S YOUR LIMIT PROBLEM



operators?
hoists?
presses?
valves?

indexing?
loading?
automation?
travel?

GEMCO ROTARY LIMIT SWITCH

CUTS ASSEMBLY COSTS ON ALL

Eliminates expensive cams or linkages, cuts wiring time, greatly simplifies assembly. Ruggedly built with shock resistant Fibralloy (fiber-glass alloy) case, dependable self-lubricating cam mechanism and variety of contact combinations. Cams are independently adjustable. Wide ratio gear selection.

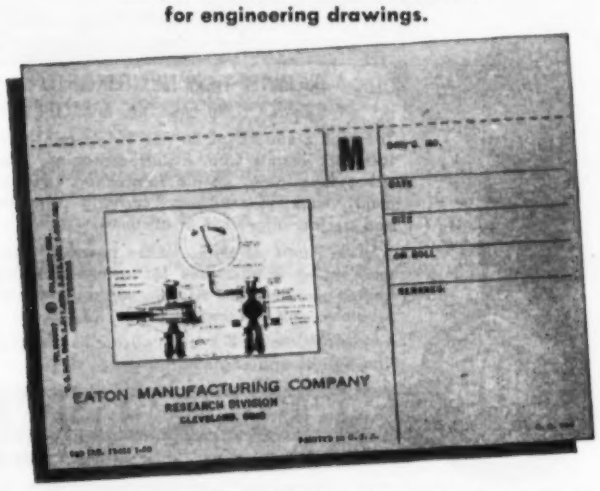
FREE BROCHURE GIVES FULL APPLICATION DATA

Specialists in Electrical Control
GEMCO ELECTRIC COMPANY
25681 W. 8 Mile Road • Detroit 19, Michigan
GEMCO

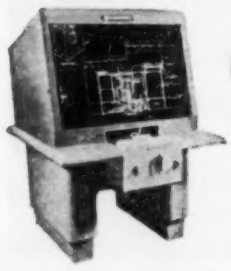
▲ For more details circle NED-652 A5 on enclosed inquiry slip ▲

Eaton Manufacturing Company Uses Filmsort for Engineering Drawings

Space-savings, convenience, easy reference—these factors are leading more and more companies to the choice of Filmsort for engineering drawings.



Eaton Manufacturing Company, large manufacturer of automotive and aircraft parts, is now using close to 450,000 Filmsort Aperture cards for filing engineering drawings. Microfilmed drawings are mounted in 3 x 5" snap-out cards, processed by Filmsort. Pertinent data is recorded simultaneously on the unprocessed snap-out card and on the Aperture card, thus eliminating possible clerical error in transcribing information to the final Filmsort card. The snap-out card serves as a reference to security film and is filed separately from the filmed record in the Filmsort card.



Easy to File!
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Reference to microfilmed drawings is simple and satisfactory with the Filmsort Surveyor viewer, the only microfilm reader with variable magnification designed especially for reading drawings and other large documents.

There is a place in your engineering department for a Filmsort application. Write for complete information without obligation.

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Filmsort®
DIVISION OF DEXTER FOLDER COMPANY, PEARL RIVER, N. Y.
▲ For more details circle NED-653 A5 on enclosed inquiry slip ▲

FOOT-OPERATED AIR VALVE
for controlling pneumatic equipment

Pneumatic equipment such as vises, clamping fixtures, punch presses and riveting machines are readily controlled with this foot-operated treadle valve. Design permits operator to place full weight on heel portion of control. Shifting pressure to forward part actuates the valve to any desired degree. List price is $15.00. Made by **Robinson Products, Inc.,** Dept. NED, 16550 Wyoming Ave., Detroit 21, Mich.

▲ For more details circle NED-654 A5 on enclosed inquiry slip ▲

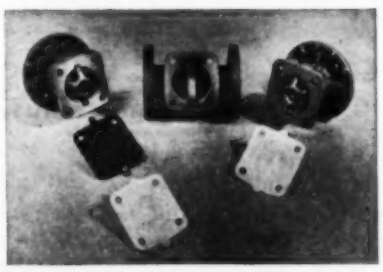
SAFETY POSTER FRAME
extra posters stored in back

Chrome plated, glass front Dav-Son frames designed for displaying 8½ x 11-in. safety posters can be "magazine loaded." As many as six posters can be

stored in back of frame so that visible poster can be removed to display the next one. Frame is available in either single or double frame sizes. Construction with mitered corners and reinforced backing assure many years of service. Made by **A. C. Davenport & Son, Inc.,** Dept. NED, 311 N. Desplaines St., Chicago 6, Ill.

▲ For more details circle NED-655 A5 on enclosed inquiry slip ▲

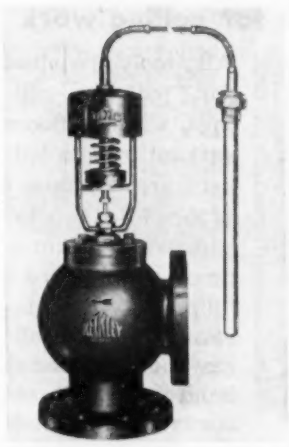
TEFLON VALVE DIAPHRAGMS
for service in —40 to 375° F range



Two types of chemically inert Teflon diaphragms permit use of Grinnell-Saunders valves in temperature range from −40 to 375° F. One-piece solid R-1 diaphragm for use in the highest range is built with a large floating tube nut to permit use in vacuum service. Special compressor adapts the standard valve for use of this diaphragm, made in 1 to 4-in. sizes. Where temperatures do not exceed 225° F and vacuums do not exceed 12 in. of mercury, R-2 diaphragm of two-layer construction is available in ½ to 6-in. sizes. This type, made with thin Teflon diaphragm and backing cushion, is interchangeable with similar Kel-F combinations in valves modified for their use. Made by **Grinnell Co.,** 277 W. Exchange St., Providence 1, R. I.

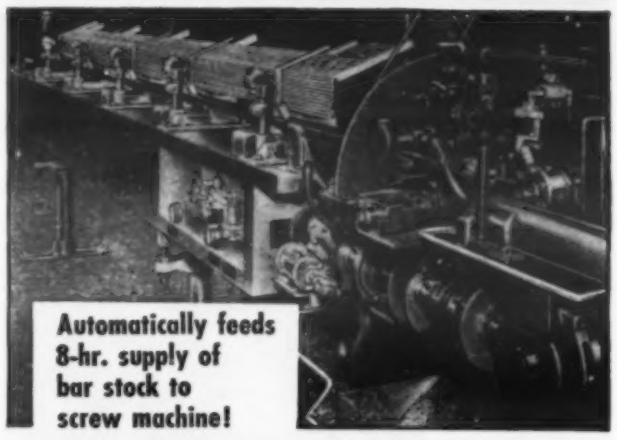
▲ For more details circle NED-656 A5 on enclosed inquiry slip ▲

TEMPERATURE REGULATORS
have bronze or semisteel body



Renewable wearing parts of stainless steel or bronze are used in line of angle type T temperature regulators. They can be mounted directly on heat exchangers and instant water heaters that have inlet connections on the top, thus saving piping and installation labor. "Over-run" feature protects thermal element in the event temperature at bulb exceeds range of the regulator. Body is bronze or semisteel and trim is bronze or stainless steel. Screwed connections in sizes from ½ to 2 in. and flanged connections in sizes from 2 to 8 in. are available. All ½ to 4-in. sizes are spring-loaded and sizes from 6 to 8 in. are weight-loaded. Made by **O. C. Keckley Co.,** Dept. NED, 400 W. Madison St., Chicago 6, Ill.

▲ For more details circle NED-657 A5 on enclosed inquiry slip ▲



LIPE AUTOMATIC MAGAZINE-LOADING BAR FEED

● Feeds stock to screw machine *all the time* — not dependent on operator.

● Cuts cycle time — *guaranteed* to attain at least 90% of machine's gross geared production capacity.

● Eliminates feed fingers — multiple feed finger feed-outs — feed finger adjustments and replacements. No jamming of remnants.

Lipe's AML Bar Feed is today's big advancement in screw machine stock feeding. Get full details — send today for 4-page folder, name of nearest distributor.

Lipe-ROLLWAY CORPORATION
Manufacturers of Automotive Clutches and Machine Tools
Syracuse 1, N. Y.

▲ For more details circle NED-658 A5 on enclosed inquiry slip ▲

OFF SHELF DELIVERY!

New COMPACT DESIGN SAVES UP TO 40% SPACE!

Proven PERFORMANCE WITH EXTRA HIGH SAFETY FACTOR!

T-J Spacemaker CYLINDERS

OIL pressure to 750 — AIR to 200 P. S. I.

Now the sensational new T-J Spacemaker sets the pace in compact cylinder design and efficient performance!

New "Self-Aligning" adjustable oil cushion means faster acceleration and better cushion than ever before . . . New T-J Super Cushion Flexible Seals for air insure positive cushion with automatic valve action for fast return stroke.

More plus features include—heavy wall, precision honed, hard chrome plated, seamless steel body . . . leakproof cylinder head to body construction . . . heavy duty, high-tensile, *hard chrome plated piston rod.* Write for bulletin SM-454-2. The Tomkins-Johnson Co., Jackson, Mich.

T-J TOMKINS-JOHNSON
RIVITORS . AIR AND HYDRAULIC CYLINDERS . CUTTERS . CLINCHORS

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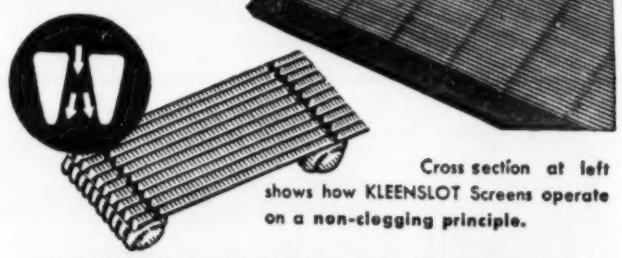
Kleenslot THE IDEAL SCREEN FOR DEWATERING AND SIZING!



Cross section at left shows how KLEENSLOT Screens operate on a non-clogging principle.

IT CAN BE ADAPTED TO FIT ANY MAKE OF VIBRATOR. It is not necessary to change your present machine to accommodate our screen.

KLEENSLOT WEDGE WIRE VIBRATOR SCREENS are of quality construction and built to give maximum long-life service. The rigid construction and method of installation prevents "whipping".

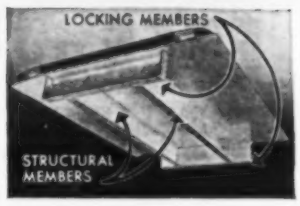
The wedge shape of the screen wire with its non-clogging, non-blinding features permits perfect separation on wet or dry screening and the rigid construction adds considerable to its capacity and efficiency when used in vibrator applications.

SEND FOR OUR ILLUSTRATED CATALOG

Wedge-Wire CORPORATION
GAS ST. AT NICKEL PLATE R.R., WELLINGTON, OHIO

▲ For more details circle NED-660 A5 on enclosed inquiry slip ▲

You can see why Magcoa rail Dockboards perform better...



Look underneath to see important *extras* that make Magcoa rail Dockboards perform better *and longer:* Magcoa locking members and Magcoa structural members.

Magcoa locking members are extruded magnesium channels extending the full distance required for a safe, slip-proof fit between rail car and dock. Outer edges are precision welded to the bottom of the Dockboard; rugged magnesium plate is welded to each end of the channel for extra strength to withstand the brutal repeated thrusts of high speed lift trucks and heavy loads.

Magcoa structural members are engineered to give maximum distribution of load weight across the entire Dockboard. Size and number of structural channels or I-beams used is determined by your specific loading requirements. Structural members are always positioned *within* the end limits of the locking members for protection.

Write for bulletin, "Look *Under* Magcoa Dockboards."

MAGNESIUM COMPANY OF AMERICA
MATERIALS HANDLING DIV. • EAST CHICAGO 6, IND.

▲ For more details circle **NED-661 A5** on enclosed inquiry slip ▲

MANCO GUILLOTINE
PORTABLE HYDRAULIC PUNCH

Easy hydraulic action of model above punches maximum capacity 1" hole in ⅜" mild steel. Develops 35 tons punching thrust. Weight 57 lbs. Readily portable for on-the-job use. Available with high-speed electric hydraulic pump for production work. Available in other models with larger capacities.

Write for Catalog

MANCO MFG. CO. | Dept. NED-1 BRADLEY, ILLINOIS

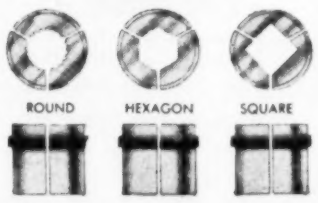
▲ For more details circle **NED-662 A5** on enclosed inquiry slip ▲

HARDINGE ELMIRA, N.Y.

Style "S"

SURE-GRIP Master Collets and Pads

Pads are interchangeable among different machines with same capacity. Available for all sizes of the following machines up to and including 3½" capacity:



CLEVELAND
CONE
GREENLEE
GRIDLEY & ACME-GRIDLEY
NATIONAL ACME
NEW BRITAIN

HARDINGE BROTHERS, INC., ELMIRA, N. Y.

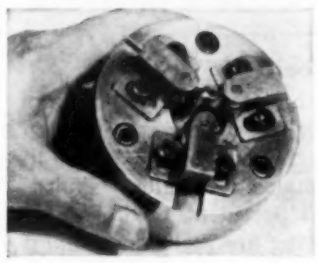
▲ For more details circle **NED-663 A5** on enclosed inquiry slip ▲

WORK POSITIONER
table adjusts to desired heights

Spring type 1000-lb capacity work positioner automatically moves loads up to or down from a 42-in. level above the floor. Mobile unit adjusts to desired table heights by series of calibrated springs. Table travels vertically along channels, the distance of travel being controlled by the number of springs attached. Each spring is calibrated to 100 lb capacity. Positioner measures 24 x 36 x 60 in. and its table bed is 24 x 30 in. Four casters and handle facilitate moving. Units can be built to any other size, capacity or work level requirements. Made by **Rack Engineering Co.,** 168 Sixth St., Connellsville, Pa.

▲ For more details circle **NED-664 A5** on enclosed inquiry slip ▲

ROLL-BURRING HEAD
deburrs ID and OD tube end corners



Spindles of many standard and special single and double-end tube burring machines can accommodate the Rol-Bur roll-burring head. It deburrs both the inside and outside diameter corners of ends of ferrous and non-ferrous tubing by a roll-forming process. Deburred surface formed by tool is smooth and concentric with the inside diameter of the tubing. Head is 3¾ in. diameter, 1⅛ in. long (less adapter) and includes three rollers and a mandrel. Adjustably mounted rollers permit deburring of ¼ to 1¼-in. OD tubing. Tool is mounted on burring machine spindle by an adapter plate of pilot, threaded or tapered type. Made by **Tubco Co.,** Dept. NED, Fowlerville, Mich.

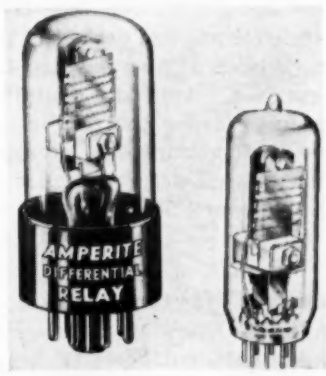
▲ For more details circle **NED-665 A5** on enclosed inquiry slip ▲

BULK TRANSPORT BODY
self-unloading unit saves handling

Deliveries from ½ to 2 tons per minute are possible, depending on the weight of material and method of discharge of bulk material carried in the Bulkmobile transport body. Self-unloading unit is offered with following discharge attachments: screw conveyor, belt and bucket elevator, belt conveyor and distributor for spreading purposes. Illustrated body has capacity of 780 cu ft. Other models are available in lengths from 15 to 35 ft, with body sides up to 36 in. high. Cement, lime, salt, sand, coal, sulphur, wood chips and many other products can be transported with considerable savings in handling time. Made by **Baughman Mfg. Co.,** 174 Arch St., Jerseyville, Ill.

▲ For more details circle **NED-666 A5** on enclosed inquiry slip ▲

DIFFERENTIAL RELAYS
are hermetically sealed delay units

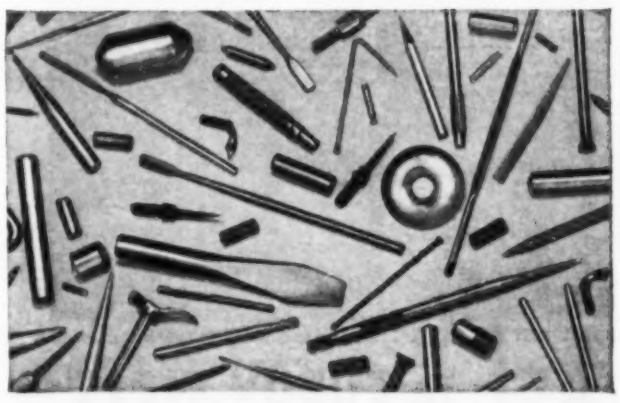


Usable for automatic overload, over-voltage, under-voltage or under-current protection, differential relays are available with standard octal or nine-pin miniature base. Since the actuating element is a heater, relay can be designed for time constants varying from 3 to 30 seconds. It will not respond to transients of shorter duration. Available in single-pole single-throw, normally-open or normally-closed designs, relays are made for 10 to 1000-ma current and 1 to 100 v. Approximately 1 w is required for heater. Made by **Amperite Co.,** Dept. NE, 561 Broadway, New York 12, N. Y.

▲ For more details circle **NED-667 A5** on enclosed inquiry slip ▲

▲ For more details circle **NED-668 A5** on enclosed inquiry slip ▲

When Close Tolerances are Vital...
Call on **TORRINGTON** for Your Small Precision Parts



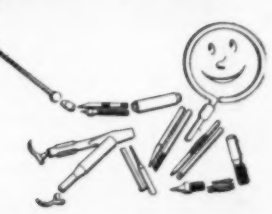
When you want "precision," you can count on Torrington. Almost 90 years devoted to producing metal parts exactly to the tolerances specified by customers assures you parts exactly "as ordered."

What's more, Torrington can give you the temper, hardness and finish you want—in any quantity—*faster, better and for less* than you can produce them yourself. Send your blueprint or a sample part for our quotation. And ask for our Condensed Catalog, showing many types of parts on which you can save.

THE TORRINGTON COMPANY
Specialties Division
808 Field Street, Torrington, Conn.

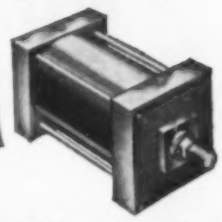
TORRINGTON *SPECIAL* METAL PARTS

Makers of Torrington Needle Bearings



▲ For more details circle **NED-669 A5** on enclosed inquiry slip ▲

EVERY ENGINEER will want a copy of this BULLETIN



WRITE FOR BULLETIN 213. Complete details and mounting dimensions on Hannifin Series "A" Square Type Fluid Power Cylinders, usable up to 200 psi, air or oil. This is the cylinder with the new, externally removable cartridge gland...the biggest improvement in cylinder design in the last 50 years. The "A" line is complete! 11 bore sizes from 1½" to 14"—13 standard mountings, many combinations. Steel heads. Brass bodies. Piston rods ground, polished and hard chrome plated. Send for Bulletin 213. It's the easiest catalog to use in the cylinder business.

HANNIFIN

Hannifin Corporation, 527 S. Wolf Road, Des Plaines, Ill.
Air and Hydraulic Cylinders • Presses • Air Control Valves

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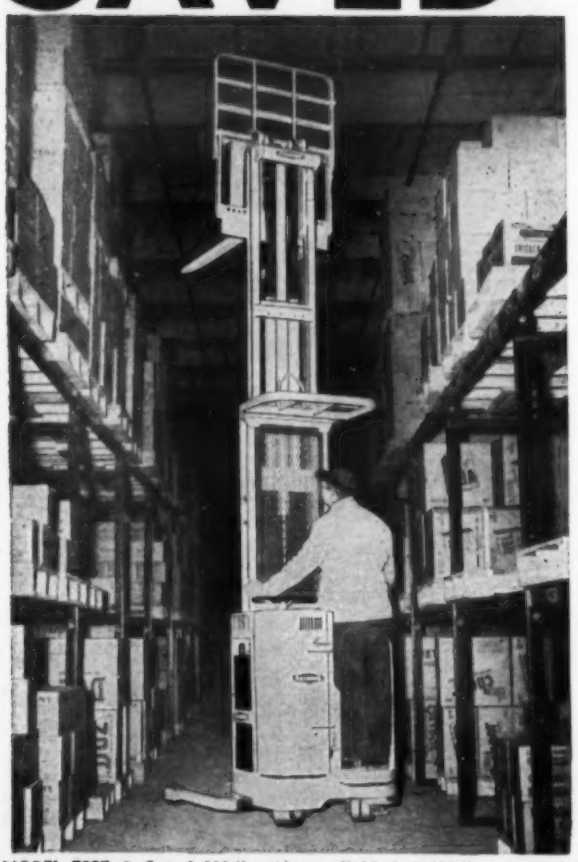
SAVED



MODEL E2ST • Cap. 2,000 lbs. Also available in 3,000 lb. cap. model.

6 FT. in EVERY AISLE

with RAYMOND Electric TIERING TRUCK

ANOTHER LARGE WAREHOUSE actually halved its aisle space with a RAYMOND Tiering Truck! 12-ft. aisles were reduced to 6-ft. Result: more useable storage space.

You can make space savings in your own plant or warehouse. Because this truck actually right-angle tiers 4-ft. pallet loads from aisles only 6-ft. wide.

RAYMOND TIERING TRUCK . . . operates in narrow aisles due to its short length and patented* off-set drive wheel with 200° turning arc. Lightweight permits use on low-capacity elevators, floors. 51" free lift enables loads to be stacked in low-ceiling areas, truck trailers, boxcars without increasing overall height. Truck is equipped with new power unit that opens up like a book for fast, easy servicing.

*PATENT NO. 2,564,002

GET FULL DETAILS!

The RAYMOND CORPORATION
4141 Madison St., Greene, N.Y.

( ) Please send Bulletin 830 describing 2,000 lb. cap. Tiering Truck.
( ) Please have your representative call.

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

▲ For more details circle NED-672 A5 on enclosed inquiry slip ▲

New Literature and Catalogs

Chrome-Nickel Alloy Steels

Carpenter Steel Co.—Of two chrome-nickel alloy steels described in illustrated booklet, one grade, No. 158, is case hardening type, and the other, No. 5-317, can be either hard-tempering or tough-tempering, depending upon heat treatment. Entitled "2 Steels Simplify Your Alloy Needs," it reports that the two alloys fill 95 per cent of all alloy jobs. Properties, sizes available and working instructions are given, along with typical uses.

▲ For more details circle NED-673 A5 on enclosed inquiry slip ▲

Hydraulic Powered Equipment

Oilgear Co.—Complete line of Fluid Power pumps, motors, tranmissions, cylinders and valves is described and illustrated in 12-page bulletin 10051-D. Featured are electric-hydraulic servo control systems for pumps and transmissions up to 150 hp, Oilgearducers for constant torque drives and two additional variable delivery feed pumps.

▲ For more details circle NED-674 A5 on enclosed inquiry slip ▲

Knives, Blades, Ways & Tools

Ohio Knife Co.—All of this company's products for machinery, metalworking, iron and steel, pump and paper and woodworking industries are found in 64-page spiral-bound sectionalized catalog. Photographs, drawings, tables and pertinent technical information necessary for ordering are included. Among diverse products are slitter knives, spacers, shear blades, ways, gibs, wear plates, work rest blades and tools.

▲ For more details circle NED-675 A5 on enclosed inquiry slip ▲

Magnetic Tape Recording Equipment

Davies Laboratories Inc.—Use of magnetic tape for data recording, reproduction and analysis is detailed in 10-page illustrated bulletin No. 54-D. Tape is also used in computer, process and machine tool control, and similar automation field applications. Various types of equipment are covered and their applications and specifications are presented.

▲ For more details circle NED-676 A5 on enclosed inquiry slip ▲

Wire Rope Assemblies

Macwhyte Co.—Units of flexible wire rope with permanently attached fittings of various types and sizes are described and illustrated in 24-page catalog 5201. Use is as part of machinery and equipment or for slings and hoists. Both wire rope and terminals are made from a variety of metal. Specifications for each type of unit are given.

▲ For more details circle NED-677 A5 on enclosed inquiry slip ▲

Rotary Multiple Pole Switches

Electro Switch Corp.—Wiring diagrams and contact charts for voltmeter, ammeter and voltmeter-ammeter type P and JR rotary multipole switches are found in 12 pages of illustrated catalog 8054-IN. Type P snap-acting and type JR detent-action unit have handle and panel mounting data, dimensions and electrical rating given. Former type handles up to 10 amp at 120 v ac and has four selector positions, while type JR has up to eight positions and handles 10 amp at 125 v ac.

▲ For more details circle NED-678 A5 on enclosed inquiry slip ▲

Torque Limiting Wrenches

Jo-Line Tools, Inc. — Thirteen different torque wrench models are described in 20 pages of this catalog. Section is also devoted to sockets, adapters and accessories. Appendix contains engineering data pertaining to torque control. Besides specifications, much other information is presented, including recommended torques for thread sizes. Wrenches have capacities from 2-50 lb-in. to 1200-4800 lb-in.

▲ For more details circle NED-679 A5 on enclosed inquiry slip ▲

Dielectric Heaters

Allis-Chalmers Mfg. Co.—How A-C dielectric heaters can help cut costs in heating, drying, baking or curing of nonconduction materials is related in 4-page bulletin 15B6431B. Units range in size from 3 to 60 kw, the latter offered without ovens, cages or work handling equipment for specific operations. Models with 15 to 50-kw ratings are available for use with continuous conveyor type oven.

▲ For more details circle NED-680 A5 on enclosed inquiry slip ▲

Which one cost $4,792.00 less to finish?

Look alike? Yes! — but what a difference in finishing costs. It cost a plumbing fixture manufacturer only $.0104 to finish the part below by Supersheen Speed Finishing. The part above cost $.25 to finish by former costly hand finishing methods. That's a saving of over 95% or $4,792.00 for 20,000 units. Supersheened finished parts maintained a much greater uniformity too.

WHAT IS YOUR FINISHING PROBLEM? Let us show you how Supersheen can save you a great deal of money. WRITE TODAY. Dept. N.

FREE
52 PAGE CATALOG
OF MONEY-SAVING FINISHING FACTS, FIGURES, "BEFORE AND AFTER" PHOTOS. LEARN THE LATEST ON EQUIPMENT, COMPOUNDS.

ALMCO Supersheen
AMERICA'S LARGEST MANUFACTURER OF ADVANCED BARREL FINISHING EQUIPMENT—MATERIALS AND COMPOUNDS
ALBERT LEA, MINNESOTA

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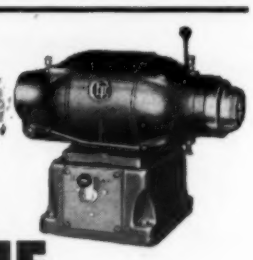
The Cincinnati



HOLLOW SPINDLE
SPEED LATHE

A Name Among Names that Stands for Fast, Versatile, Flexible Burring and Finishing

Regardless of what you call it — Burr Head, Reamer Driver, Burring and Reaming Machine, or Speed Lathe — the results to small parts producers is the same; satisfactory results in the form of better finishing. Hollow spindle construction means it's especially adaptable to tubing and bar stock, in a wide range of sizes. Why rob production time from make-shift, adapted machines designed and needed for other operations? The Cincinnati Speed Lathe offers a range of types, voltages, speeds and capacities. It's available for pedestal installation, too.

Quality Equipment Since 1902

Profit from the complete story. Write for Catalog 55DD

TRADE The Cincinnati MARK

THE CINCINNATI ELECTRICAL TOOL CO.
Division of THE R. K. LeBLOND MACHINE TOOL CO.

▲ For more details circle NED-682 A5 on enclosed inquiry slip ▲

A Complete Bushing Guide

FOR YOUR ENGINEERING AND PURCHASING FILES

Everything you need to know about Drill Jig Bushings. This catalog pictures and describes A.S.A. standard bushings. Gives helpful suggestions to purchasers and designers, lists hundreds of Ex-Cell-O bushings available from stock. Makes ordering quick and easy.

Write Ex-Cell-O for this Bushing Guide—as many as you'll need.

EX-CELL-O CORPORATION
DETROIT 32, MICHIGAN

54-19 XLO

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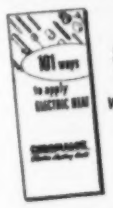
OFFERS YOU OVER 15,000 TYPES, SIZES AND RATINGS OF ELECTRIC HEATERS FOR ALL YOUR NEEDS

FAST · EFFICIENT · ECONOMICAL · EASY TO INSTALL



This Booklet Shows You How To Save Money with Electric Heat

It's packed with ideas you'll find useful.

Get your copy now!

Regardless of your heating problems, there are Chromalox Electric Heaters that give you the heat you want when you want it. Compact Chromalox Units provide dependable, around the clock service; they are easily installed in existing or new equipment. Operating temperatures can be quickly regulated manually or thermostatically to fit the work requirements in your plant.

A-4406

Industrial Div., EDWIN L. WIEGAND CO., 7509 Thomas Boulevard, Pittsburgh 8, Pa.

See other ad on pg. 4

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

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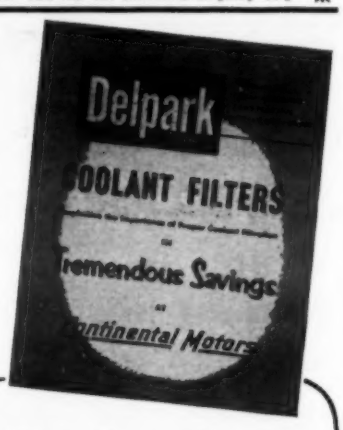
Delpark

FILTERS

Save $1,754 per filter Annually



. . . on Grinding Operations

GET THE FACTS IN THIS 4 PAGE BROCHURE

Delpark filters can save you money on grinding machine operations. Here is a case history report verified by company officials on the tremendous savings made through the use of Delpark filters. This story enumerates the savings step by step to total one of the largest lump savings ever made in the metalworking field.

WRITE TODAY. THERE'S NO OBLIGATION

INDUSTRIAL FILTRATION COMPANY
14 INDUSTRIAL AVENUE · LEBANON, INDIANA

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Gaskets, washers, wick lubricators are just a few applications of felt. Felt reduces vibration, controls noise, seals oil in, water out. American makes many types of felt, in rolls, sheets, and in parts cut to your blueprints, ready for assembly. Tell us what you make, or are designing, and we will send technical information along with our suggestions.

American Felt Company

GENERAL OFFICES: 62 GLENVILLE ROAD, GLENVILLE, CONN.

▲ For more details circle NED-686 A5 on enclosed inquiry slip ▲

New Processes and Materials

ADHESIVE COPPER FOIL for printed circuit application

After proper curing, Permacel 195 adhesive - coated copper foil is unaffected by heat of 410° F solder for 10 seconds. This heat resistance is higher than required by NEMA standards. Material possesses controlled thickness, uniform adhesive at the glue line and stability in storage. The 1-oz electrolytic copper foil is coated with a thermosetting adhesive in dry film form and can be laminated to steel, brass, bronze, aluminum, wood and phenolics. Use is in printed circuits in various types of equipment. Adhesive sets at a glue line temperature of 325 to 350° F for 10 to 20 minutes. Pressure required for lamination is from 100 to 2000 psi. Made by **Permacel Tape Corp.**, Dept. R, New Brunswick, N. J.

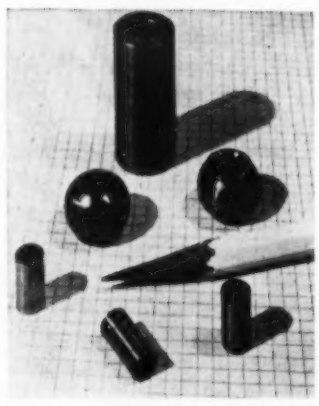
▲ For more details circle NED-687 A5 on enclosed inquiry slip ▲

CARTON SEALING ADHESIVE sets-up quickly, resists moisture

Intended for sealing of corrugated fruit or nut cartons, Citrus carton resin adhesive has wide application possibilities in industrial packaging. Sealer has high resistance to moisture and climatic fluctuations and is formulated to "set-up" quickly. It can be used on all types of case sealing equipment and requires no dilution. Light in color, adhesive dries into a transparent film. It is shipped in 55-gal steel drums. Formulated by **Swift & Co.**, Adhesive Products Dept., 4115 S. Packers Ave., Chicago 9, Ill.

▲ For more details circle NED-688 A5 on enclosed inquiry slip ▲

BEARING MATERIAL runs with or without oil



This bearing material will operate at temperatures from −120 to 500° F. Wear characteristics are exceptionally good at extreme temperatures. In oil application, material's 40 per cent moly, graphite and other lubricative solids have oil retention and absorption values which provide wicking action to supply bearing surfaces with lubricative film. Material has ultimate compression strength of 22,700 psi and can be machined to close tolerances. Made by **Booker-Cooper, Inc.**, Dept. N, 6940 Farmdale Ave., North Hollywood, Calif.

▲ For more details circle NED-689 A5 on enclosed inquiry slip ▲

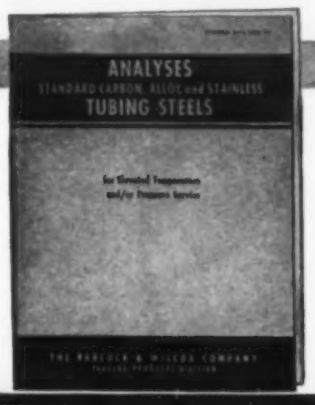
GLOSS ENAMEL in self-spraying dispenser

Touch-up, maintenance and occasional small parts finishing operations are simplified with line of Spray-Pak industrial enamels in aerosol spray cans. Finishes are formulated for maximum grease resistance, adhesion, gloss retention, ability to withstand humidity without peeling and instant drying upon application. Nonclogging nozzle is used on 12-oz spray can. Pigments are used both for coloring and for corrosion prevention. Available colors are chrome aluminum, canary yellow, light yellow, medium yellow, dark yellow, flambeau red, crimson, vermillion, bright red, chinese red, light green, forest green, dark green, blue, marine blue, light gray, machinery gray and dark gray. Retail price is $1.59. Made by **Chase Products Co.**, Dept. NED, 1816 St. Charles Rd., Maywood, Ill.

▲ For more details circle NED-690 A5 on enclosed inquiry slip ▲

Tubing Steel Analyses?

B&W's Technical Data Card 177 gives analyses of Standard Carbon, Alloy and Stainless for Elevated Temperature and/or Pressure Service. Gives ASTM specifications and grades as well as B&W identification. Send for TDC 177.



TA-4081(LP)

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing
Alliance, Ohio—Welded Carbon Steel Tubing

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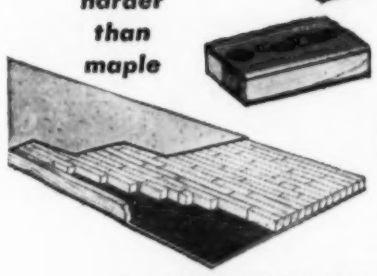
Write Today for FREE SAMPLE

30% harder than maple



of this NEW MIRACLE Resinwood®

ShopTop
"HARDER THAN MAPLE"

WORKBENCH TOP

for INDUSTRIAL USE — for NEW OR REPLACEMENT BENCHES

ShopTop is tough, warp-free, splinter-proof, and 30% harder than rock maple. The smooth Resinwood facings resist alkali, acid, oil, and grease.

Excellent for new or replacement workbenches. Available in any size to meet any requirements. Write Today for a Free Sample of the New Resinwood Workbench Top, ShopTop

Available through selected industrial distributors in principal cities or write direct for sample and price list.

QUALITY Since 1868 RIMCO MILLWORK

ROCK ISLAND MILLWORK COMPANY
RESINWOOD DIVISION
Rock Island 4 Illinois

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ONE right driven speed for each and every job from the Heart of the Drive

This low-cost American Adjustable-Speed Sheave, the Heart of the Drive, gives you the exact driving speed you need at all times—for any operating condition. A simple screw adjustment changes the pitch diameter of the sheave to synchronize production lines or compensate for motor and belt drive variations. No pulley changing, no expensive transmissions, no lost time required to get speed changes of as much as 100%. No sheave freezing or fretting corrosion on the shaft. For food, chemical, textile, packaging—any industry where precise speed control is a must. Write today for new catalog. No obligation.

AMERICAN PULLEY COMPANY

AMERICAN PULLEY CO.
4294 Wissahickon Ave.,
Phila. 29, Pa.

Please send your Adjustable-Speed Drive Catalog

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Company_____
Address_____
City_____ Zone____ State____

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KEEP OUT
APPLY AT OFFICE
DELIVERY REAR
NO TRESPASSING
EXIT
EMPLOYEE'S ONLY

SAVE . . . BY ORDERING
Light Reflecting
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METAL SIGNS

Write today for Free Bulletin No. O1X showing complete list of standardized industrial signs. Sturdy, long lasting steel — rich lustrous brown finished in brilliant contrasting light-reflectant colors — size 9½" x 3⅝".

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EACH
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in dozen lots

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5026 WOODLAND AVENUE CLEVELAND 4, OHIO

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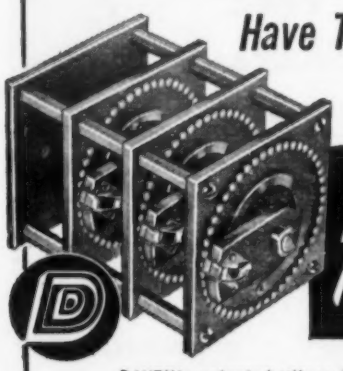
Have This Advanced Feature...



The "Knee-Action" ROTOR

DAVEN's patented "Knee-Action" Rotor permits a greater number of switch positions and poles in a smaller space than was ever possible before.

This exclusive DAVEN feature, developed by DAVEN's skilled engineering staff, is but one of the many contributions which DAVEN has made to solve difficult switch problems.

Daven also supplies switches from thousands of standard units or will engineer a special switch to meet your particular needs.

For any and every switch problem, CALL ON DAVEN!

THE DAVEN CO. 199 Central Avenue Newark 4, New Jersey

Write for FREE copy of DAVEN's new, 28-page brochure on SWITCHES!

For more details circle NED-695 A5 on enclosed inquiry slip

Easy To Use
ADJUSTABLE Floating REAMERS

Two types are available: Type S for standard reaming and Type SL for blind hole reaming. Reamer sizes and range: from ¾" to 4".

Wickman-Brown Floating Reamers with micrometer adjustment assure absolute accuracy, complete concentricity and superfine finishes on standard and blind hole reaming operations. Each reamer has a permanent positive float that is designed for maximum effectiveness throughout the full range of the reamer. Optimum float is predetermined in manufacture and requires no adjustment.

The simple adjustability of Wickman-Brown reamers results in considerable direct labor economy for the user. Adjustment to desired setting requires only the skill, effort and time needed to set a micrometer—no keys or special tools are required. Blades may be sharpened in usual manner without affecting micrometer readings.

FEATURES
- Fully Floating Blades
- Blades may be renewed
- Micrometer type setting
- No gears or springs
- Positive and constant float

THE Wickman MANUFACTURING CO.
10327 CAPITAL AVE. (OAK PARK) DETROIT 37, MICH.

For more details circle NED-696 A5 on enclosed inquiry slip

New Literature & Catalogs

Petroleum Testing

The 28th edition of the "Fisher/Tag Manual for Inspectors of Petroleum" is a 220-page reference guide. It gives the essential details of 35 of the most widely used tests for the basic physical and chemical properties of petroleum and its products. Useful conversion tables adopted internationally in 1953 are reprinted in full. Other tabulations contain practical data for petroleum inspectors. This handbook is priced at $1.75. Published by Fisher Scientific Co., 715 Forbes St., Pittsburgh 19, Pa.

For more details circle NED-697 A5 on enclosed inquiry slip

Plastics & Resins

Bakelite Co.—Properties and uses of over 50 Bakelite plastics and resins are presented in 12-page revised "1955 Condensed Reference File" which covers wide range of special and general purpose phenolic, vinyl, styrene, polyethylene, fluorothene, polyester, silicone and epoxy plastics and resins and Krene film and sheeting. Specific properties, applications, ability to be molded, extruded, calendered or otherwise formed and other data are included.

For more details circle NED-698 A5 on enclosed inquiry slip

Constant Temperature Equipment

Electric Hotpack Co.—Oven for hazardous locations, incubator, noncorrosive dye bath, room for petroleum research, oven for electronic parts, glass annealing furnace, paraffin viscosity bath, pharmaceutical sterilizer and moisture evacuating, battery plate and conductivity testing ovens are types of constant temperature equipment illustrated and briefly described in 4-page bulletin SP.

For more details circle NED-699 A5 on enclosed inquiry slip

Paint-Base & Corrosion Resistant Coatings

Allied Research Products, Inc.—File of technical literature on Iridite chromate conversion coatings for prevention of corrosion and paint-base treatment of nonferrous metals classifies data by general information, metal to be treated and finishing processes. Technical information sheets offer technical and government specification data and operating instructions on specific processes.

For more details circle NED-700 A5 on enclosed inquiry slip

Taps, Dies, Counterbores, Broaches

Threadwell Tap & Die Co.—Descriptions of lines of taps, dies, counterbores and keyway broaches are found in three individual price lists. Type, steel, shank, cutting size and catalog number of each is given, along with price.

For more details circle NED-701 A5 on enclosed inquiry slip

Fork Lift Truck

Hyster Co.—Maneuverability resulting from narrow wid.h and short overall length is among features of 15,000-lb capacity model RC-150 lift truck described in 16-page brochure 1287B. Wheels can be turned on any ground with but one finger on the steering wheel.

For more details circle NED-702 A5 on enclosed inquiry slip

Guide Pins & Bushings

Lamina Dies & Tools, Inc.—Photos, detailed line drawings with dimensions and prices for line of guide pin bushings and guide pins are content of 12-page catalog. Bushings are bronze plated and solid bronze.

For more details circle NED-703 A5 on enclosed inquiry slip

Pre-Engineered Steel Buildings

Brookville Mfg. Co.—Variety of uses to which pre-engineered steel buildings are being put by American industry are described in illustrated bulletin 101. Brookville all-steel fully-insulated buildings are usable for manufacturing plants, machine shops and warehouses. General specifications for structures, formerly made by Blaw-Knox Co., are given.

For more details circle NED-704 A5 on enclosed inquiry slip

Rolled Steel Rings

Edgewater Steel Co.—Solid steel weldless rings, made in variety of cross sections with ribs, flanges, grooves, conical surfaces, tapered surfaces and other shapes formed during rolling, are described in 12-page bulletin "Rolled Steel Rings." Diameters range from 5 to 180 in., weights up to 14,000 lb. Applications include bearing races, gears, pipe flanges, turret gears and electric motor parts.

For more details circle NED-705 A5 on enclosed inquiry slip

New Catalog of Precision RUBBER PARTS

. . . by Stalwart

If you have a rubber part problem . . . SEE STALWART FIRST! Here's a 16-page multi-colored and illustrated catalog that explains Stalwart's ability to mass-produce custom engineered rubber parts. Hundreds of rubber stocks are charted for physical properties as well as the extreme temperature resistant Silicones. Sections of catalog indicate methods of fabrication and indicate processes by which various parts should be produced for maximum performance at the most economical price.

Write today for catalog No. 51SR-1 for complete information.

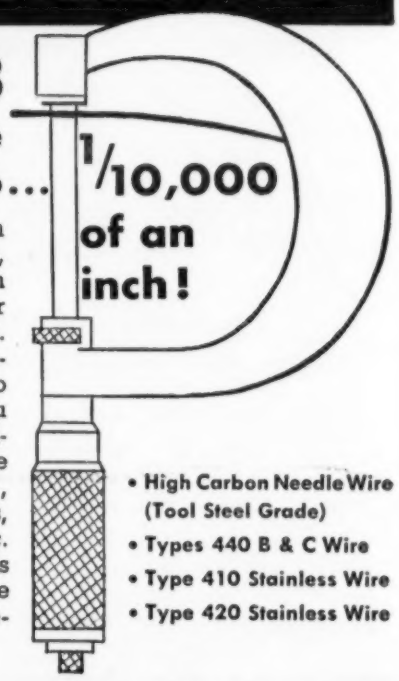
5040-SR

STALWART RUBBER COMPANY
Mfg. Plants in Bedford, Ohio and Jasper, Georgia
Main Offices 151 Northfield Rd., Bedford, Ohio

For more details circle NED-706 A5 on enclosed inquiry slip

WANT FINE WIRE ACCURACY FOR SMALL PRECISION PARTS?

WEBB dies are accurate to... 1/10,000 of an inch!



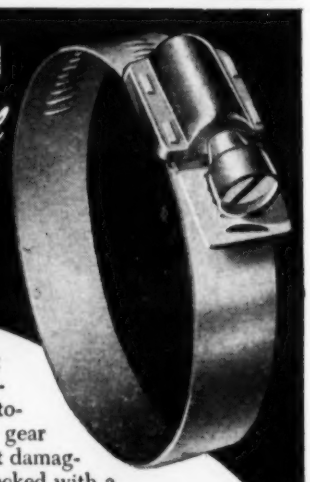
Let Webb put an end to tolerance, size and finish worries on your fine wire needs. Diligent maintenance of Webb dies assures you of superior product performance for your pins, shafts, pivot staffs, drills, points, etc. Enjoy the benefits of using fine wire made from *specialty* steel.

- High Carbon Needle Wire (Tool Steel Grade)
- Types 440 B & C Wire
- Type 410 Stainless Wire
- Type 420 Stainless Wire

WRITE TODAY for free samples
The Carpenter Steel Company
MAKE YOUR OWN TESTS!
WEBB WIRE DIVISION
New Brunswick, N.J.

For more details circle NED-707 A5 on enclosed inquiry slip

How can YOU use Aero-Seal HOSE CLAMPS?



• AERO-SEALS — the finest hose clamps made, were designed for aviation and automotive use. Precision worm gear drive tightens evenly without damaging hose or material, stays locked with a never-let-go grip. Stainless steel bands resist corrosion. Application and removal takes mere seconds. Re-usable over and over.

Design engineers, production and maintenance men find AERO-SEALS perfect for many special uses. Your product or plant can use them, too. Available in the widest possible range of sizes. Write for details.

Aero-Seal PRECISION WORM DRIVE HOSE CLAMPS

ANOTHER BREEZE MARK PRODUCT

BREEZE CORPORATIONS, INC. 700 Liberty Ave., Union, N. J.

For more details circle NED-708 A5 on enclosed inquiry slip

Shredded Paper

IS THE IDEAL PACKING MATERIAL

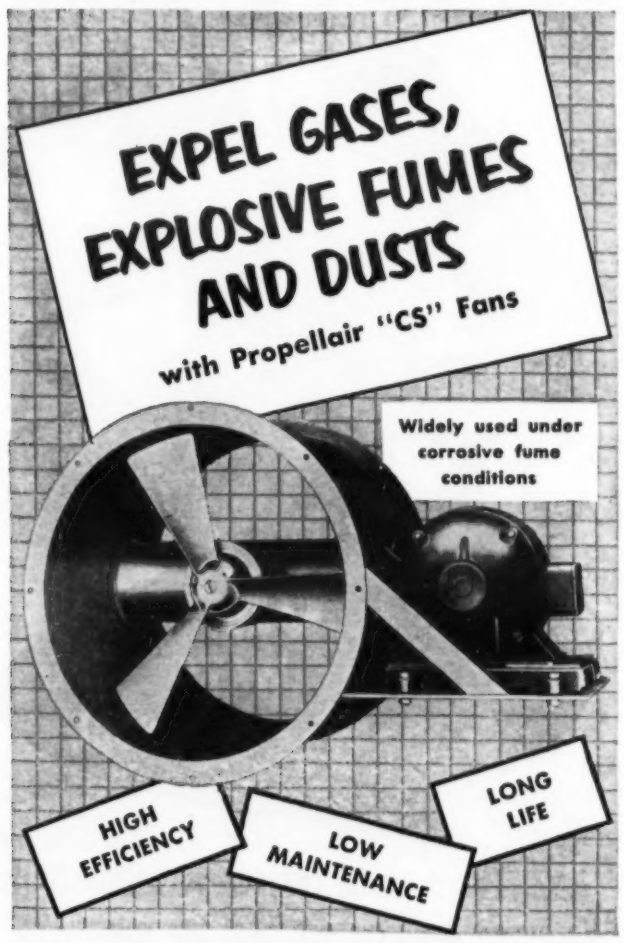
produce it yourself for . . .

(1) Real dollar & cents savings
(2) Minimum inventories
(3) Substantial space savings
(4) Dependable supply

Test a "Silver" paper shredder in your own shop without obligation—Get complete details by writing *today* to:

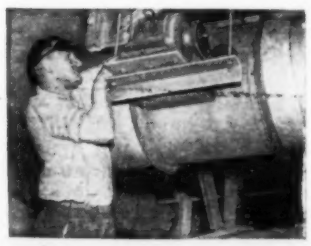
INDUSTRIAL SHREDDER & CUTTER CO.
107 Mill Street Salem, Ohio

▲ For more details circle NED-709 A5 on enclosed inquiry slip ▲



■ **Propellair** "CS" Fans are rugged, heavy-duty units for duct installation. The cast aluminum alloy airfoil propeller is housed in a welded heavy-gauge steel duct section and belt guard with internal bearing assembly.

Robbins & Myers *All-Weather Motor* located outside airstream. Sizes 20" to 60", with certified air deliveries of 3750 to 85,000 c.f.m. Available with corrosion and abrasion-resisting finishes and with ventilated bearings suitable for operation in high temperatures.



Simplified Installation
Propellair "CS" Fans are built to fit standard duct sizes without the need of elbows. The fan drum has front and rear flanges drilled for easy mounting into duct system.

Our engineers are at your service for fan selection and application advice. Write for Bulletin 650N.

R&M PROPELLAIR®
DIVISION OF ROBBINS & MYERS · INC
SPRINGFIELD · OHIO.

Man Cooler Direct Drive Sky-Blast Vaneaxial Extended Shaft

▲ For more details circle NED-710 A5 on enclosed inquiry slip ▲

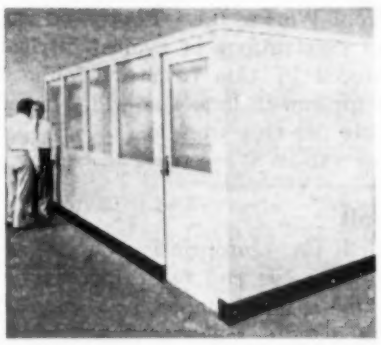
New Processes & Materials

TEMPERATURE INDICATOR
liquefies to show temperature

Inclusion of 463° and 488° F ratings in line of Tempilaq° temperature indicating coatings makes this material available in 12½° F steps from 113° to 500° F as well as in 50° F intervals from 500° to 2000° F. Liquid is applied by brushing or daubing, and dries quickly to a dull, opaque film. When its temperature reaches its rating, coating liquefies. Free ½-oz sample of Tempilaq° in any rating will be sent on request. Made by **Tempil° Corp.**, Dept. A, 132 W. 22nd St., New York 11, N. Y.

▲ For more details circle NED-711 A5 on enclosed inquiry slip ▲

MOVABLE METAL WALLS
available in standard units



Light weight and wide variety of standard units facilitate the rearrangement of Executive Partitions for use in office, industrial and other types of buildings. They are available in standard cornice heights, from door-height units to 10-ft cornice-high units, and in multiples of 6-in. widths up to 60 in. wide. Panels are 2¾ in. thick and consist of two sheets of steel bonded to a continuous honeycomb type core of insulating fiber which is impregnated with Bakelite phenolic resin. Door and panel units of same widths are interchangeable. Partitions have flush baseboards and built-in leveling devices. All steel and steel and glass combinations are offered in any specified shade or color of baked enamel. Made by **Mills Co.**, 941 Wayside Rd., Cleveland 10, O.

▲ For more details circle NED-712 A5 on enclosed inquiry slip ▲

RUBBER HOSE
conveys sharp, abrasive materials

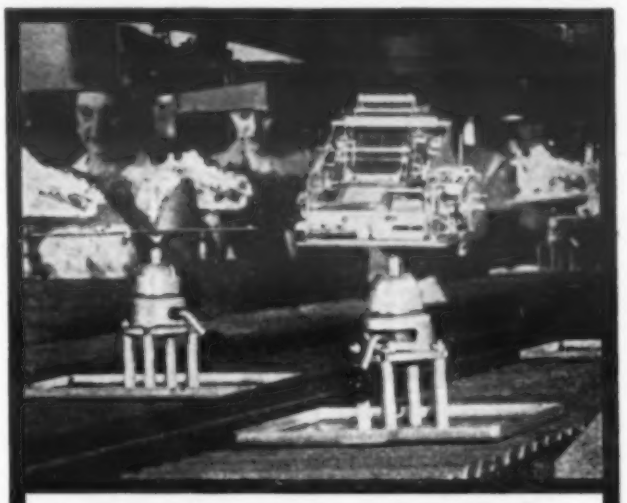
Metal shavings and chips, sand and gravel, ground or powdered chemicals and variety of other sharp and abrasive materials can be conveyed in Convertapipe rubber hose. Heavy chunks of iron ore and coal up to 8 in. long are borne along inside the hose by stream of water at pressures as high as 250 psi. Hose features lining of Armorite, a tough abrasion-resisting rubber which reportedly outwears steel 20-to-1. It affords the advantage of flexibility for negotiating corners and bends. Sizes range from 1 to 14 in. OD. Interior spiral wire reinforces hose to prevent kinking and collapsing. Made by **B. F. Goodrich Co.**, Dept. E, 500 S. Main St., Akron 18, O.

▲ For more details circle NED-713 A5 on enclosed inquiry slip ▲

POLYETHYLENE PLASTIC
for molding and extruding

Spherical pellet form in which Tenite polyethylene plastic is offered permits the material to flow uniformly from hopper into heating chamber of the molding or extrusion machine. Smooth surface will not readily catch or hold dust and foreign particles. Shape also requires minimum storage area and results in few fines, making it easy to clean the hopper when changing color. Polyethylene can be used for pipe, squeeze bottles, housewares, wire and cable coating, film for packaging and laminating and other products. Various colors and color concentrates are available. Made by **Eastman Chemical Products, Inc.**, Dept. P-1, Kingsport, Tenn.

▲ For more details circle NED-714 A5 on enclosed inquiry slip ▲



NO HOLDS BARRED AT BURROUGHS

PowRarm work positioners are shown here at the Burroughs Corp., Detroit. PowRarm holds set-ups at any desired angle, freeing both hands. They never become obsolete, no matter how often you re-tool. Before investing in special fixtures again, try PowRarm.

ATTACH THIS AD TO YOUR LETTERHEAD FOR FREE DEMONSTRATION OR LITERATURE!

NED-1

WILTON TOOL MFG. CO., INC.
925 Wrightwood Ave., Chicago 14, Illinois
wilton tool canada ltd., guelph, ontario, canada

▲ For more details circle NED-715 A5 on enclosed inquiry slip ▲

they're SELF-LOCKING

IN ANY POSITION

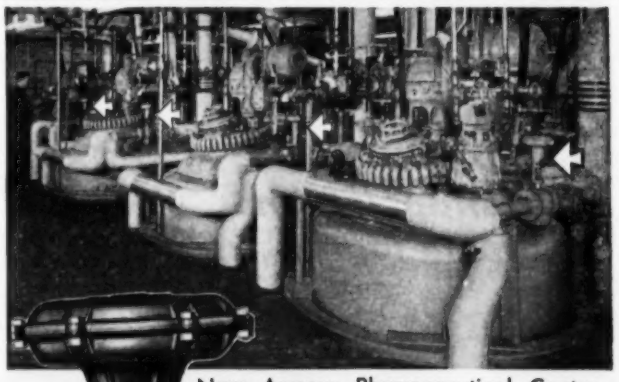
on a threaded member

FLEXLOCS stay put in any position on a bolt or stud the moment the locking threads are fully engaged; they do not have to be seated. And FLEXLOCS stay tight, no matter how severe the vibration; are one piece, all metal; can be used repeatedly. One nut covers a temperature range up to 550°F. Call upon your local industrial distributor for literature and samples or write STANDARD PRESSED STEEL Co., Jenkintown 24, Pa.

FLEXLOC LOCKNUT DIVISION

sps
JENKINTOWN PENNSYLVANIA

▲ For more details circle NED-716 A5 on enclosed inquiry slip ▲



New Armour Pharmaceutical Center

Uses POWERS

FLOWRITE Diaphragm Control Valves

in many processes where Gamma Globulin, ACTHAR, Insulin, BIOPAR and other famous ARMOUR products are made. Here flow of steam, water, propylene glycol and vacuum is extremely important and regulated by Powers Flowrite Valves. Their many points of superiority are described in Bulletin 344V.

(c8)

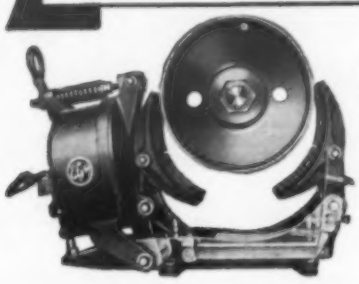
Write for Bulletin 344-V

THE POWERS REGULATOR COMPANY
Skokie, Ill., Offices in 60 Cities, See Your Phone Book

Over 60 Years of Automatic Temperature and Humidity Control

▲ For more details circle NED-717 A5 on enclosed inquiry slip ▲

LONG LIFE BRAKES FOR A-C and D-C MOTORS by EC&M



Type WB Brake showing how the motor armature is easily lifted out. At top left is the handle-nut for compressing the spring when removing motor armature, changing brake shoes and for manual control.

The brake lining is molded to match curvature of wheel and shoe.

These Type WB Brakes have a thick, tough block type lining.

The blocks have proper frictional quality **throughout the entire thickness,** permitting uniform and complete wear down to rivet heads. Brake adjustments are infrequent.

Built in several sizes. Supplied with series or shunt-wound operating coils for direct current motors. On a.c. service, they are supplied in shunt-wound form for use with a compact rectifier-unit. Send for Bulletins 1004 and 1006.

THE ELECTRIC CONTROLLER & MFG. CO.
2698 EAST 79th STREET • CLEVELAND 4, OHIO

▲ For more details circle **NED-718 A5** on enclosed inquiry slip ▲

FOLDER ON FLOOR FINISHING AND MAINTENANCE

gives complete information on how to preserve six common types of floors

Here in one handy file folder is all you need to know about preservation of terrazzo, rubber tile, linoleum, concrete, asphalt (mastic) tile, and wood floors. Originally designed as a folder from which architects could write actual specifications, this folder is all facts and no "sales talk."

It includes complete directions on how to clean, seal, and maintain floors, and a list of the products to be used with brief factual descriptions of each.

Printed on heavy manila stock and tabbed like a file folder, it makes a convenient place to file all your floor preservation data. Write West Disinfecting Company, Dept. 16, 42-16 West Street, Long Island City 1, N. Y.

▲ For more details circle **NED-719 A5** on enclosed inquiry slip ▲

NEW STRAPPING TAPE

Brainard now offers complete service— steel strapping and strapping tape

● The Brainard Strapping System, comprising a complete line of steel strapping, tools, and accessories, has now been expanded to include strapping tapes, both pressure-sensitive and gummed, and dispensers for all applications. The tapes are filament-reinforced to provide high tensile strength, and are designed for strapping applications. Brainard is the first company to offer both strapping methods. Brainard can give you unbiased recommendations on the best method for your applications. Most shipping departments and packaging lines can use both steel strapping and strapping tape to advantage.

Brainard
STEEL DIVISION
SHARON STEEL CORPORATION

For booklet write
BRAINARD STEEL DIVISION
Dept. HH-1, Griswold Street
Warren, Ohio

▲ For more details circle **NED-720 A5** on enclosed inquiry slip ▲

New Literature & Catalogs

Polyethylene Products

Nalge Co.—Thirty-six items made of polyethylene are described and illustrated in 8 pages of catalog A954. Technical details of the material are also given. Covered are beakers, buckets, bottles, carboys, pour spouts, dispensing bottles, funnels, jars, stirring rods, spigots, pails, valves and waste baskets, among others.

▲ For more details circle **NED-721 A5** on enclosed inquiry slip ▲

Automatic Drill Unit

Dumore Precision Tools—"Operations and Service Manual," through words and pictures in its 16 pages, describes technical operations and maintenance of series No. 24 automatic drill unit. Sections cover theory of operation, controls, component operation, sequence of pneumatic operation, electrical sequence, setup instructions, sequence drilling and accessories and attachments. Table of recommended pressures and speeds is included.

▲ For more details circle **NED-722 A5** on enclosed inquiry slip ▲

Production Facilities

Rockford Die & Tool Works, Inc.—Photos of various departments and illustrations of typical intricate precision parts produced by this firm are found in 4-page brochure. Supplement lists the wide variety of equipment available for this work.

▲ For more details circle **NED-723 A5** on enclosed inquiry slip ▲

Carbide-Tipped Tools

Cleveland Twist Drill Co.—Information on use and care and recommended speeds and feeds for carbide-tipped drills and reamers is available in 24-page illustrated booklet. Regrinding instructions are also given. Detailed are carbide-tipped drills for various materials; heavy duty, taper shank, long series straight shank, four-fluted taper shank core and masonry drills; machine, shell and adjustable reamers; counterbores and spot facers; and special tools.

▲ For more details circle **NED-724 A5** on enclosed inquiry slip ▲

Using Corrugated Packaging

Hinde & Dauch Paper Co.—"How To Pack It" is a well-illustrated, highly descriptive brochure of 32 pages which covers a selection of 12 different styles and over 70 types of corrugated boxes for a variety of products. Copy suggests proper methods of sealing, packing and displaying.

▲ For more details circle **NED-725 A5** on enclosed inquiry slip ▲

Space-Saving Assembly Equipment

Alden Systems Co.—"More Dollars from Less Space" is both title and subject of 32-page illustrated booklet which describes the Alden Work Center System. It shows how to fit more production assembling units into a smaller manufacturing area and how power and facilities can be supplied all over a plant—using "building block" equipment. All jobs are individualized with machines, fixtures and operator setups. Layout changes are made in a few minutes.

▲ For more details circle **NED-726 A5** on enclosed inquiry slip ▲

Roof Ventilators

Penn Ventilator Co.—Technical data and capacity ratings for Penn line of ventilators are contained in 8-page illustrated catalog and AIA file 12K2. Sections are devoted to centrifugal, propeller fan, continuous ridge, rotary and gravity types. Performance, capacity and dimensional tables are included, as is base and damper information.

▲ For more details circle **NED-727 A5** on enclosed inquiry slip ▲

Voltage Stabilizers

Raytheon Mfg. Co.—16-page illustrated catalog 4-260 describes Raytheon voltage stabilizers, their performance characteristics and their importance to industry. Application data and types currently available to the trade are covered. Standard models meet power requirements ranging from 5 to 2000 w.

▲ For more details circle **NED-728 A5** on enclosed inquiry slip ▲

Tool Room Grinding Wheels

Carborundum Co.—V40 line of tool room grinding wheels, subject of 4-page illustrated brochure A1310, includes wheels for all types of operations. Straight, recessed, straight cut, flaring cup, dish and saucer shaped wheels are available. Recommendations for grinding high speed tool and die steels and hints for conservation of tools are given in brochure on the vitrified bond wheels.

▲ For more details circle **NED-729 A5** on enclosed inquiry slip ▲

Protects AIR TOOLS AND EQUIPMENT

against rust, scale and condensation in the air line ...provides constant lubrication

The Keller Lubricator-Filter operates automatically when air tools or equipment are in operation. Filter removes moisture as well as solids—easily cleaned by opening drain cock at bottom. Oil feeds from the lubricator through an upright wick—no flooding or waste when tools are not in use.

Transparent bowls show when filter needs draining, or when light spindle oil should be added to lubricator. Write for descriptive Bulletin #65-5.

Send for **illustrated descriptive bulletin and detailed information**

Keller Tool Company
1331 Fulton St., Grand Haven, Mich.

▲ For more details circle **NED-730 A5** on enclosed inquiry slip ▲

Here are 6 reasons why Ohio Knife Hardened Bedways are best for you

1. You buy consistent quality at a fixed cost, thus eliminating the uncertainties of producing bedways yourself. When you buy from Ohio Knife you can depend on bedway accuracy, prompt delivery and exact costs.

2. OK ways are so hard they're practically wear-proof, which helps maintain constant accuracy throughout the life of the machine. This extreme hardness, 65-66 Rockwell "C", is uniform to 3/16" depth. The Gisholt Machine Co. demonstrated OK bedway hardness by taking a section from the way, making it into a tool bit, and cutting 1045 cold-rolled steel with it.

3. Because of the OK process of welding hardened tool steel to a soft steel backing (under 2500 tons pressure) we can produce extra long lengths that will not warp or bow even if you store them for long periods before installation. Thus, your high assembly costs of butting short pieces is eliminated.

4. A complete selection of bedway shapes, sizes and lengths is available to you. OK ways can be built to your specifications for any application.

5. Ohio Knife hardened bedways are so well known for their high quality that many machine buyers look for and favor machine tools built with OK ways. So to gain a big sales point, make sure you use OK bedways.

6. OK ways are also available in welded aluminum bronze.

Write to Dept. 32-H for comprehensive bulletin.

Manufacturers for the Metal Working Industry of:
SLITTER KNIVES • SHEAR BLADES • ROTARY SHEAR KNIVES
HARDENED SPACERS • HARDENED WAYS • GIBS • BALL RACES
BRONZE WAYS • WEAR STRIPS

THE OHIO KNIFE CO.
CINCINNATI 23, OHIO

▲ For more details circle **NED-731 A5** on enclosed inquiry slip ▲

CUTS COSTS AMAZINGLY IN

- ASSEMBLING
- EMBOSSING
- FORMING
- PUNCHING
- BLANKING
- COINING
- PEENING
- RIVETING
- CRIMPING
- CUTTING
- FORGING
- MARKING

Most jobs done on expensive, heavy presses can *now* be done faster and cheaper by the light low-priced Mead Air Hammer using the new adjustable, spring*less* "Bullet Velocity" MEAD AIR TRIP! It delivers blows equivalent to 7½ tons down to as little as a few ounces—at several blows per second, if desired! Enjoy the *competitive benefits* of really low cost production with durable, powerful, improved Impact Air Hammer. Put Mead "how-to-do-it" experience to work for you.

Write Factory Now For Nearest Mead Man Name and Cost-Cutting Bulletin No. NA-15

▲ For more details circle NED-732 A5 on enclosed inquiry slip ▲

AMEs

Over 16,000,000 cycles without wear or loss of accuracy... how many more will they complete?

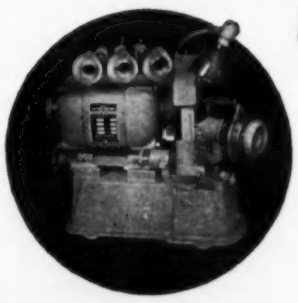
Several Ames Model 282 Long Range Dial Indicators *with plain bearings* are currently giving an amazing demonstration of performance and endurance under test conditions. After more than 16,000,000 cycles each, at 240 strokes per minute, 9 hours a day—they still have their original accuracy!

The reasons for this outstanding record? Simply high quality materials, simple basic design, rugged construction ... and expert craftsmanship.

If you would like to have our recommendations on your measurement problem, send blueprints and specifications. And ask for your free copy of our catalog on Ames micrometer dial indicators and gauges.

Representatives in principal cities. B. C. AMES CO. 34 Ames Street Waltham 54, Mass.
Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

▲ For more details circle NED-733 A5 on enclosed inquiry slip ▲



THE ONLY DRILL GRINDER SO FAST & EASY TO OPERATE!

Only the *Black Diamond* Drill Grinder lets you sharpen small drills accurately by such a simple grinding method. Fast, easy operation. No complicated adjustments. Compare these outstanding features:

- Exclusive "positive-positioning" assures accuracy!
- No skill required by operator!
- Both lips ground in one operation!
- Web thinning made easy with special attachment!

Get all the details! Send for folder!

BLACK DIAMOND SAW & MACHINE WORKS, INC.
72 North Ave., Natick, Mass. OLympic 3-4480

▲ For more details circle NED-734 A5 on enclosed inquiry slip ▲

New Processes & Materials

PLASTIC TUBING improved for less heat deformation

Improved formulation for Temflex 105 plastic tubing increases its resistance to deformation by heat and to "cut through." Tubing is used in electrical and electronic equipment and is UL - approved for continuous operation at 105° C. Improvement also enhances color stability under operation at elevated temperatures. Samples are available for testing purposes. Made by **Minnesota Mining & Mfg. Co.**, Irvington Varnish & Insulator Div., Dept. NED, 6 Argyle Terrace, Irvington 11, N. J.

▲ For more details circle NED-735 A5 on enclosed inquiry slip ▲

ALL-PURPOSE ELECTRODE for welding mild steel

All-purpose Sureweld CE electrode for welding mild steel is easy to handle in all positions over wide current range and forms slag that is exceptionally easy to remove. It gives high rate of deposit with little spatter. In physical properties, CE electrode exceeds AWS E-6010 specifications. Tensile strength of deposited metal is 75,000 to 85,000 psi. It also conforms to codes for welding boilers and pressure vessels. Electrode is offered in seven sizes from 3/32 to 5/16-in. diameter and in 12, 14 and 18-in. lengths. Made by **National Cylinder Gas Co.**, 846 N. Michigan Ave., Chicago 11, Ill.

▲ For more details circle NED-736 A5 on enclosed inquiry slip ▲

TRACING PAPERS & CLOTHS improved translucency, erasability

Three improved tracing papers and three improved tracing cloths feature high translucency and permanence for crisp prints, even after long periods of time. Papers do not become brittle, and leaching is negligible after long storage or where drafting tape is applied. One of three improved tracing cloths, Whitney No. 378, accepts both ink and pencil equally well. It is offered in blue and white and features water repellancy and resistance to common solvents and perspiration stains. Five-yd x 36-in. sample rolls are available for $1.00. Free 8½ x 11-in. samples are also offered. Made by **Charles Bruning Co.**, Dept. NE15, 4700 Montrose Ave., Chicago 41, Ill.

▲ For more details circle NED-737 A5 on enclosed inquiry slip ▲

PLASTIC MOLDING COMPOUND parts can be pulled hot from mold

Glass-filled silicone compound 301 facilitates molding of high temperature plastic parts. They can be pulled hot without cooling the mold. Properly molded parts will withstand continuous exposure to 450° F, intermittent exposure to 700° F. Tensile strength after molding 10 minutes at 340° F is 5000 to 7000 psi, compressive strength is 10,000 to 12,000 psi and impact strength is 15 to 22 ft lb per inch. Flexural strength ranges from 12,000 to 14,000 psi at room temperature and 5000 psi at 392° F. Compound can be molded with conventional equipment, and finished parts can be machined with high speed tools. Mold shrinkage ranges from 0 to 0.0035 per cent. Developed by **Dow Corning Corp.**, Dept. IS, P. O. Box 592, Midland, Mich.

▲ For more details circle NED-738 A5 on enclosed inquiry slip ▲

Users say These two cut-off wheels top all others

For wet cutting *The Norton rubber bonded R50*

For dry cutting *The Norton resinoid bonded B9*

Reports covering the broadest range of cutting-off jobs; on ferrous and non-ferrous metals, show the Norton R50 and B9 wheels outperforming competition by a wide margin.

The rubber bonded R50 wheel gets universal praise for its unusual excellence of cut, without burr or burn, in wet cutting jobs. The resinoid bonded B9 — a high speed, high production wheel — is frequently reported to outlast other wheels as much as 5 to 1 in dry cutting applications.

Ask your Norton Distributor about the many profit-boosting "Touch of Gold" advantages these outstanding Norton wheels can add to your own cutting-off operations. Or write to NORTON COMPANY, Worcester 6, Mass. Distributors in all principal cities. *Export:* Norton Behr-Manning Overseas Incorporated, Worcester 6, Massachusetts.

W-1603

NORTON *Making better products... to make your products better*

and its BEHR-MANNING *division*

NORTON: Abrasives • Grinding Wheels • Grinding Machines • Refractories
BEHR-MANNING: Coated Abrasives • Sharpening Stones • Pressure Sensitive Tapes

▲ For more details circle NED-739 A5 on enclosed inquiry slip ▲

The quickly-installed, low-priced CHICAGO WATCHCLOCK system is so infallible—so tamperproof—that users earn reduced insurance rates.

Save money on insurance and increase your protection against fire, theft and sabotage by installing this simple, positive system of recording your watchman's activities ... The CHICAGO WATCHCLOCK system quickly pays for itself!

The first—and still the first

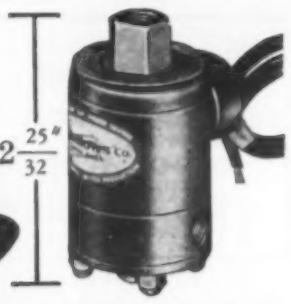
CHICAGO WATCHCLOCK

DIV. GREAT LAKES INDUSTRIES, INC.
1522 South Wabash Avenue, Chicago 5, Illinois
Offices in Principal Cities

Write today for Folder of ILLUSTRATED DETAILS

▲ For more details circle NED-740 A5 on enclosed inquiry slip ▲

NEW HIGH CAPACITY 3-WAY AIR-PILOT VALVE



Bellows "EPV" Sets New Performance Standards for Small Valves

FREE-FLOW CAPACITY OF 5.4 CFM AT 100 PSI

CHOICE OF 115, 230, 440, OR 12 V. SOLENOIDS

PORT SIZE ....1/8" ORIFICE .....1/16"	MAX. AIR PRESSURE 120 PSI	OPTIONAL PORT FOR MANIFOLD MOUNTING

The EPV's size and capacity make it highly versatile. It is equally rugged and dependable. Solenoid coils are "potted," providing almost 100% freedom from vibration damage. Coils are designed for continuous duty at speeds as high as 600 cycles per min. Moving parts which lie in the air stream are of stainless steel to resist corrosion.

Bulletin EPV-30 Gives Full Information
Address Dept. NED 155

1079A

The Bellows Co.
AKRON 9, OHIO

▲ For more details circle NED-741 A5 on enclosed inquiry slip ▲

"Stack up" with American STORAGE RACKS

and cut your handling and warehousing cost!

here's an exclusive American feature

send for catalog

When you "stack up" with American Tubular Storage Racks, you also "stack up" savings. The ingenious and simplified American feature, "erected without bolting or welding," has made them first choice with many businesses both large and small. American Racks are designed to meet practically every storage need. Send for catalog and get the facts on American before you buy any type of rack.

Among those sold on American are:

Central Warehouse Co.
Ford Motor Co.
Link Belt Co.
McKesson & Robbins, Inc.
Radio Corporation of America
Standard Brands, Inc.
U. S. Rubber Co.
F. W. Woolworth Co.

AMERICAN METAL PRODUCTS CO.

STORAGE RACK DIVISION
5959 Linsdale • Detroit 4, Michigan

▲ For more details circle NED-742 A5 on enclosed inquiry slip ▲

New Literature & Catalogs

Gas-Butane-Gasoline Engines

Westinghouse Air Brake Co., Le Roi Div.—Integral V-12 cylinder block design, counterbalanced crankshaft and hydraulic valve lifters are features of Le Roi L3460 and L4000 gas-butane-gasoline engines, described and illustrated in 8-page brochure E-7. Charts show space savings of the V-design engines and horsepower ratings from 225 to 675 at varying rpm's.

▲ For more details circle NED-743 A5 on enclosed inquiry slip ▲

Power Distribution Duct

Continental Electric Equipment Co.—Connections of 10-ft lengths of Plug-Duct, used for industrial power distribution, can be made from either side, at tap boxes, end closers and plug-in units as shown in 24-page illustrated bulletin 300. Hangers permit installation in any plane. Elbow, tee and cross fittings are covered, as well as transformer taps, flanges and switchboard stubs. Application and dimensional data and specifications are included.

▲ For more details circle NED-744 A5 on enclosed inquiry slip ▲

Diazotype Materials & Accessories

Tecnifax Corp.—Variety of materials and applications available to users of the diazotype (whiteprint) reproduction process is described in 36-page "Data Book." This process utilizes light-sensitive papers, cloths and films to produce direct-positive copies of translucent originals. Major portion of book discusses improved materials and techniques available for new and prospective uses.

▲ For more details circle NED-745 A5 on enclosed inquiry slip ▲

Wire & Flat Stock Formings

Turner & Seymour Mfg. Co., H & O Div.—Hundreds of Dee-rings, round rings, square and rectangular rings, loops and a multitude of special "Wire and Flat Stock Formings" are illustrated in 24-page catalog of this title. Flat metal stampings and progressive die stampings made from flat stock are also shown.

▲ For more details circle NED-746 A5 on enclosed inquiry slip ▲

Indexing Turntables & Cam Drives

Eisler Engineering Co.—Indexing turntables and variable speed controls as well as geneva gear and barrel cam drives are detailed in profusely illustrated 8-page catalog 88-55. Company makes over 300 different types of special machines.

▲ For more details circle NED-747 A5 on enclosed inquiry slip ▲

Formed Wire Products

Peerless Wire Goods Co.—Plant facilities for formed wire manufacturing, shown in 8-page brochure cover operations from wire storage warehouse to final inspection and shipping. Booklet can be valuable to purchasing men, production supervisors and designers in its presentation of wire fabrication processes. Facilities can handle assorted sizes of wire up to ½-in. diameter.

▲ For more details circle NED-748 A5 on enclosed inquiry slip ▲

Forming & Bending Brake

O'Neil-Irwin Mfg. Co.—16-page manual D-BBM illustrates how a single Di-Acro brake can be converted into a bar holder, tab former, radius former, open end brake, standard brake or box and pan brake simply by changing top forming bar. Specifications and capacities on all brakes are tabulated. Capacity of all Di-Acro units is 16-gage mild steel sheet.

▲ For more details circle NED-749 A5 on enclosed inquiry slip ▲

Screw Machine Products

Biddle Screw Products Co.—Photos in 8-page brochure effectively depict company's facilities for producing "Screw Machine Products." Automatics for handling stock up to 3¾-in. diameter are shown as well as equipment for such second operations as drilling, milling tapping, broaching, honing and many forms of grinding. Testing, gaging and checking are also shown.

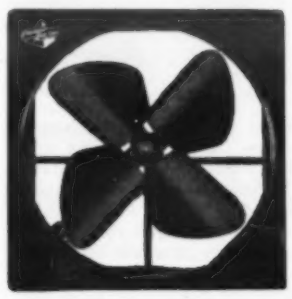
▲ For more details circle NED-750 A5 on enclosed inquiry slip ▲

Synchronous Motors

R. W. Cramer Co.—Recently developed high-torque synchronous motor for constant-speed or timing drives is subject of 8-page bulletin PB-110. Piece covers standard type 112 synchronous motor, type 142 clutch unit motor and type 152 dual motor. Complete details about each type are provided.

▲ For more details circle NED-751 A5 on enclosed inquiry slip ▲

EMERSON-ELECTRIC
The fans with the Lifetime Motors



Maximum ventilation at minimum cost has brought wide use of EMERSON-ELECTRIC Belt-Drive Exhaust Fans for all kinds of air-moving jobs in all types of industry. Five sizes, 24" to 48".

Years of continuous cooling before re-lubrication*—just one of the ways 24" and 30" Air Circulators demonstrate the outstanding endurance of EMERSON-ELECTRIC Lifetime Motors. *6000 hours

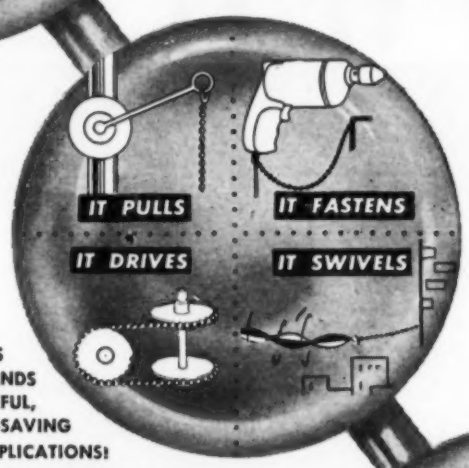
Write for free catalog No. 2002. THE EMERSON ELECTRIC MFG. CO., ST. LOUIS 21, MISSOURI.

LOOK AT THE RECORD AND YOU'LL SPECIFY EMERSON-ELECTRIC

Emerson Electric
OF ST. LOUIS SINCE 1890

▲ For more details circle NED-752 A5 on enclosed inquiry slip ▲

take advantage of *Versatile* **BEAD CHAIN**



IT HAS THOUSANDS OF USEFUL, COST-SAVING APPLICATIONS!

Bead Chain is available in 5 diameters from 3/32" to 3/8" with tensile strengths ranging from 18 to 200 lbs., in a variety of metals and finishes. No matter what the requirement, our engineers will be glad to assist you in solving your chain applications.

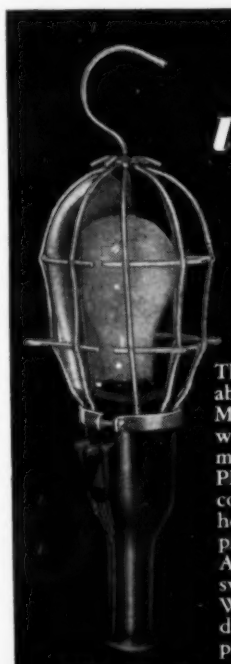
For complete information send for FREE HELPFUL CATALOG

THE BEAD CHAIN MANUFACTURING CO.
16 Mountain Grove St., Bridgeport, Conn.

▲ For more details circle NED-753 A5 on enclosed inquiry slip ▲

McGILL *lamp guards*

STAND THE WEAR AND ABUSE OF HEAVY USE



The most popular all purpose portable lamp guard ever produced, the McGill 7000 series, has extra heavy steel wires electrically welded with a chromate finish over a heavy zinc plate. Pliable molded rubber handles provide cord seal and strain relief disk. Lampholders are 660 watt 250 volt either plain or waterproof. No-Rol feature. Available with or without Levolier switch and 18-2-SJT black rubber cord. Will last many times longer than ordinary portable in all heavy duty applications.

McGILL 7000-5R

Send for McGILL Catalog No. 49-A

50th Anniversary

YOU CAN DEPEND ON McGILL® QUALITY

McGILL MANUFACTURING CO., INC. 151 N. Campbell St. Valparaiso, Indiana

▲ For more details circle NED-754 A5 on enclosed inquiry slip ▲

Weather Sleet Splash PROOF

MERCOID
PRESSURE CONTROL

AVAILABLE IN 17 PRESSURE RANGES FROM
0-30" VAC. TO 300-2500 PSI.
WITH THE SENSITIVITY YOUR APPLICATION REQUIRES

Conforms to Nema specifications 1A (semi-dust tight), 2 (drip tight), 3 (weather resistant, weather proof, splash proof, sleet proof, moisture resistant and rain tight), 4 water tight (hose test).

The cover provides for visible inspection of the sealed Mercoid mercury contact and the calibrated dial. Adjustments are external.

WRITE FOR BULLETIN 14 PW

THE MERCOID CORPORATION
4201 BELMONT AVE., CHICAGO 41, ILLINOIS

For more details circle NED-755 A5 on enclosed inquiry slip

For PRESS STAMPING PRODUCTS WITH CURVED OR STRAIGHT LINE MARKING

PRESS STYLE STEEL TYPE HOLDER
MODEL PH-50

Body and press shank are one piece with flanges to hold type chase in position. Type chase with almost any size or number of characters can be removed and inserted without operator placing hands in press.

Write for Catalog 100

Mecco SAFETY MARKING TOOLS
M.E.CUNNINGHAM CO.
1055 CHATEAU STREET, PITTSBURGH 33, PA.

For more details circle NED-756 A5 on enclosed inquiry slip

is there a "STOCK" answer to your "SPECIAL" gauge problems?

Very likely there is! USG stocks more than 200,000 standard gauges in all sizes, ranges and types. Usually a slight modification will make a stock gauge fill your "special" needs—at a considerable saving in time and money. If not, our design engineers will be glad to aid you in developing just the right "special"

That's why more and more companies come to USG with their gauge problems. Write today and tell us *your* requirements.

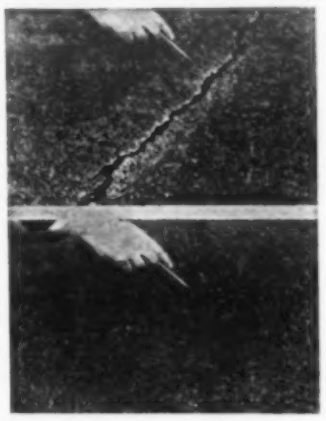
UNITED STATES GAUGE USG — Gauge Headquarters for over 50 years

United States Gauge, Division of American Machine and Metals, Inc., Sellersville, Penna.

For more details circle NED-757 A5 on enclosed inquiry slip

New Processes & Materials

FLOOR REPAIR MATERIAL
withstands heavy loads immediately



Formulated specifically for repairing floor cracks and preventing further surface deterioration, Jiffy Floor can be applied without interfering with production or traffic and withstands heavy loads immediately. It is a fine granular, ready-to-use plastic product that readily fills hairline cracks, shallow holes, spalled floors or expansion joints. Product will not crack, crumble or curl. It can be applied either indoors or out and is not affected by temperature changes. When applied by merely priming, filling and tamping, it is waterproof, dustless, skidproof and noiseless. Made by **Monroe Co.**, Dept. M-1, 10703 Quebec Ave., Cleveland 6, O.

For more details circle NED-758 A5 on enclosed inquiry slip

ABRASIVE BELT LUBRICANT
increases life, improves finish

Twelve-ounce pressurized cans of Excelene grinding and polishing oils are available for use with abrasive belts. Lubricant is said to improve surface finish and increase belt life and production on many abrasive belt grinding and polishing operations. Excelene NF is offered for use with nonferrous metals and Excelene FD for use with ferrous metals. Made by **D. A. Stuart Oil Co.**, 2731 S. Troy St., Chicago 23, Ill.

For more details circle NED-759 A5 on enclosed inquiry slip

ENLARGING PAPER
high printing speed, good contrast

Neutral black image tones and good contrast over a wide exposure range are obtainable with prints made on Jet high speed enlarging paper. It has high printing speed, even contrast grade spacing and graduation stability essential for production printing, retaining these characteristics even when stored for long periods. Long exposure scale and four contrast grades cover all printable negatives. Jet glossy single weight paper is available in 8 x 10 and 11 x 14-in. sizes. Same emulsion is also coated on double-weight stock in Kashmir and Velvet surfaces, the former a finely pebbled paper with high sheen. Velvet takes pencil, crayon and water color markings readily. Made by **General Aniline & Film Corp.**, Ansco Div., 40 Charles St., Binghamton, N. Y.

For more details circle NED-760 A5 on enclosed inquiry slip

EXTERIOR MASONRY PAINT
resists fade, stain, peel, mildew

Rapidly applied vinyl latex exterior masonry paint called Spred Glide-On dries to the touch within 30 minutes when applied on stucco, concrete block, brick, cinder block, unglazed tile, asbestos shingles and siding and primed metal. Application can be with brush or roller. Application equipment is easily cleaned by rinsing in soapy water and under a faucet. Finish "breathes" interior moisture vapor, yet it absorbs moisture and expands when wetted to form a watertight protective barrier. Finish is not affected by gasoline, kerosene, lubricating oils or grease and is resistant to various acids and alkalis, fading, staining, peeling and mildew. Twelve colors, white and 18 intermix colors are available. Made by **Glidden Co.**, Berea & Madison Ave., Cleveland 2, O.

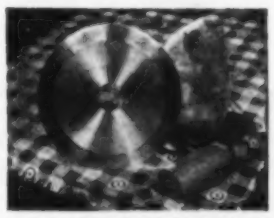
For more details circle NED-761 A5 on enclosed inquiry slip

HYDE ENGINEERS CAN HELP YOU
reduce your cutting tool costs now

RUBBER CIRCULAR KNIVES AND HAND CUTTING TOOLS

LEATHER CUTTING TOOLS OF EVERY DESCRIPTION

VEGETABLE AND FOOD PACKERS KNIVES


HOME AND INDUSTRY FOOD SLICING KNIVES

WRITE FOR SPECIFICATION CHART

HYDE MANUFACTURING CO.
SOUTHBRIDGE, MASS.

For more details circle NED-762 A5 on enclosed inquiry slip

TURN PIPE DREAMS INTO PIPE BENDS

Pipe, tube and structural bending is now simplified with a PEDRICK PRODUCTION BENDER. Heretofore difficult bends, such as offsets and off-plane bends, can now be made in production quantities at an amazingly low cost. ALL PEDRICK PRODUCTION BENDERS are complete with motor, and are equipped with automatic duplicate bending relays.

Write For Descriptive Folder Dept. 6

Prices start as low as $1575.00

(Motor and all Electrical Equipment included)

PEDRICK TOOL & MACHINE CO.
3640 N. Lawrence St. Philadelphia 40, Pa.

For more details circle NED-763 A5 on enclosed inquiry slip

Fastenings are small, but mighty important to the life of your equipment—especially when there's a corrosion problem. Prevent this danger—use Harper Everlasting Fastenings. In stock are over 7,000 different types and sizes to meet all requirements. Call your Harper Branch Office or Distributor. Write for information.

Specialists In All Corrosion-Resistant Fastenings

BOLTS, NUTS, SCREWS, RIVETS, WASHERS of BRASS, BRONZE, MONEL, ALUMINUM, STAINLESS

HARPER

The H. M. Harper Company
8212 Lehigh Avenue
Morton Grove, Illinois
Please send me Harper Catalog 25.
Name.....
Company.....
Address.....
City.....Zone....State.....

For more details circle NED-764 A5 on enclosed inquiry slip

TEFLON*...

Converted by ETHYLENE, — *the specialists*

This amazing material is chemically inert, has excellent dieletric properties, resists heat and cold, is nonadhesive, and possesses great flexural strength. We make it in a great variety of sizes and shapes, of the finest quality, and for quick shipment. May our experts help you?

Write For Catalog N

EXTRUDED OR MOLDED RODS, TUBES, AND SPECIAL SHAPES. NON-POROUS SHEETS. THIN FILM AND TAPE. MACHINED COMPONENTS.

Pioneers and Specialists in TEFLON products

ETHYLENE CHEMICAL CORPORATION

245 Broad St. • Summit, New Jersey

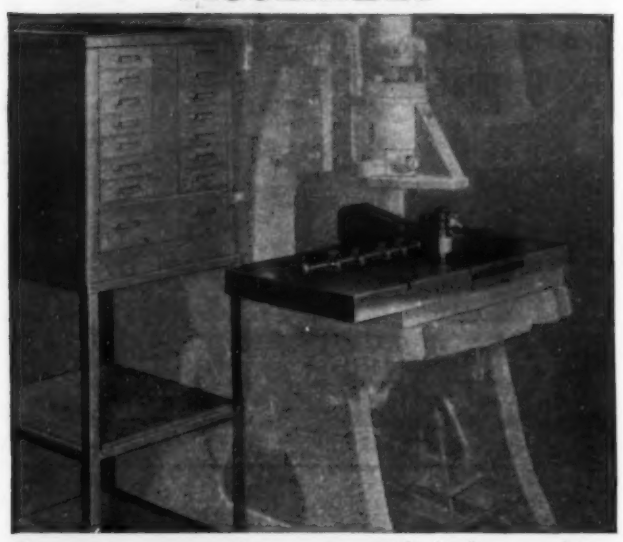
*Du Pont Trade-Mark for tetrafluoroethylene resin

▲ For more details circle NED-765 A5 on enclosed inquiry slip ▲

Announcing

WALES

QUICK-CHANGE PUNCHING & GAUGING ASSEMBLY



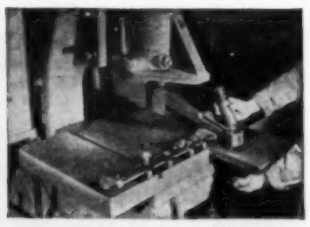
Converts presses into a versatile hole punching machine with **20 SECOND PUNCH AND DIE CHANGE**

● This new, self-contained press accessory pays for itself in a matter of a few months...in some cases in a matter of weeks by such unusual time saving advantages as changing punches and dies in 20 seconds. Holder keeps punch and die in permanent alignment. Built-in adjustable gauging provides a new, simple, fast, accurate method of locating the work.

Popularly known as the Wales "PPG Group", it consists of a bed plate, quick-change holder, 18" back gauge bar, 18" stop support rail and a combination punch storage cabinet and tool rack.

This is too BIG a story to tell in this space, so write for illustrated PPG Bulletin.

Showing Wales 3½" Holder for punching holes up to 3½" in diameter. This holder is not part of the "PPG Group" but is available as optional equipment.



Showing how easily and quickly the punch and die is removed and replaced in the Wales Quick-Change Holder for punching holes up to 1⅛" in diameter.

WALES-STRIPPIT CORPORATION

George F. Wales, Chairman

363 Payne Avenue, North Tonawanda, N. Y.

(Between Buffalo and Niagara Falls)

WALES-STRIPPIT OF CANADA LTD., HAMILTON, ONTARIO

▲ For more details circle NED-766 A5 on enclosed inquiry slip ▲

New Literature & Catalogs

Compensating Clamps

Design Aids Co.—Several parts can be clamped at one time with compensation for size differences by Compensating Equalizers described in illustrated data sheet. Vertical rollers shift position in their chamber to exert equal pressure against each of a number of separate loose jaws. Compensators can be applied to all types of vises for milling, grinding, etc., or applied to jigs and fixtures.

▲ For more details circle NED-767 A5 on enclosed inquiry slip ▲

High Voltage Motor Starters

Electric Controller & Mfg. Co.—Line of air-break electric starters for 2200-5000-v motors which use type ZHA 50,000 kva air-break contactor is subject of 8-page illustrated folder 1060. For circuits of higher fault capability, they are built with current-limiting power fuses and in Valimitor style in which air-core reactors limit infinite kva to a finite value that is easily cleared

▲ For more details circle NED-768 A5 on enclosed inquiry slip ▲

Lighting Equipment

F. W. Wakefield Brass Co.—Ten types of lighting equipment are illustrated and described in ten respective bulletins provided in brochure 55. Lighting techniques described include, Sigma—synthesizing or combining electricity into composition of structure; Beta—recessing lighting into a suspended ceiling; Omega—on-surface mounting of lighting upon a structural ceiling; and the Wakefield ceiling—a translucent ceiling suspended from lighting channels. Other six brochures deal with fluorescent and incandescent luminaires.

▲ For more details circle NED-769 A5 on enclosed inquiry slip ▲

Hydraulic Cylinders

Vickers Inc.—Compact hydraulic cylinders for general industrial application at working pressures up to 2000 psi are subject of 8-page bulletin 54-68. Available mounting styles are foot (bracket), flange (head end), flange (rod end), extended tie rod and clevis. Drawings of these styles are keyed to chart providing cylinder dimensions for bore sizes from 1½ to 6 in.

▲ For more details circle NED-770 A5 on enclosed inquiry slip ▲

Constructional Alloy Steel Plate

United States Steel Corp.—Carilloy T-1, a low carbon quenched and tempered constructional alloy plate steel with yield strength of 90,000 psi or more, is subject of 44-page technical bulletin ADVL-317-54. An all-purpose material, it is readily fabricated and welded. Mechanical properties, application data and other information are included.

▲ For more details circle NED-771 A5 on enclosed inquiry slip ▲

Clamps & Press Screws

Adjustable Clamp Co.—32 illustrated pages of catalog No. 19 describe extensive line of Jorgensen and Pony clamps, hand screws, press screws and similar tools. Hinged clamps, offered with track for sideways adjustment, are covered. "How to" information is included, along with selection and care data.

▲ For more details circle NED-772 A5 on enclosed inquiry slip ▲

Self-Lubricating Cored, Bar & Plate Stock

Chrysler Corp., Amplex Div.—Over 597 sizes of standard Oilite cores, bars and plates are listed in 6-page catalog CB-54-1. They are made from heavy duty, self-lubricating bearing material and can be used for permanent repairs, in emergencies or for experimental purposes.

▲ For more details circle NED-773 A5 on enclosed inquiry slip ▲

Ready-Mixed Aluminum Paint

Aluminum Co. of America—Revised publication "A Suggested Specification for Ready-Mixed Aluminum Paint for Highway Bridges" is now available. Piece sets forth methods for testing paint's composition, weight per gallon, drying time, viscosity and moisture content.

▲ For more details circle NED-774 A5 on enclosed inquiry slip ▲

Safety Gratings & Floorings

Bustin Firm-Grip Grating Corp.—Descriptive catalog BC-1 shows various types of grating, platforms, ramps, ladders, flooring, catwalks and dock boards. It also features complete line of truck and trailer safety equipment including grille guards, gates, brackets and safety steps.

▲ For more details circle NED-775 A5 on enclosed inquiry slip ▲

HD-501 protects and preserves hose and guns.

Cut clean-up costs with hose and gun cleaner!

HD-501

Saves you up to 83% on thinner!

DeVilbiss Hose and Gun Cleaner removes *all* paint by forcing solvent charged with compressed air through hose and gun; cleans up to four 24-ft. lengths of hose with one filling. Serves several spray stations, or may be piped for use at one point. Write for data on HD-501 Hose and Gun Cleaner, *today!* Priced about $21.00.

THE DEVILBISS COMPANY

Toledo, Ohio

Santa Clara, Calif. • Barrie, Ontario • London, England

DEVILBISS

▲ For more details circle NED-776 A5 on enclosed inquiry slip ▲

The "MASTER COMPAR"

INDICATING MICROMETER COMPARATOR

has the VISIBLE feel

No Arguments as to correctness of reading due to "feel".

Use it as Comparator, Master Micrometer, Go & No Go Gage. 1" Range reading in **1/10,000"**

To attain permanent accuracy at these close limits, highest precision workmanship and exclusive design of mechanism are of Major Importance and ONLY found in "MASTER COMPAR".

0-1" SIZE IN HARDWOOD CASE **$95.00**

Also Available in LARGER SIZES

A RIGHT HAND TOOL

Release button for movable Anvil on RIGHT Hand side enables you to hold tool the conventional way.

NEW—

Resetting to Zero in 5 seconds

Quick adjustable tolerance hands.

Heavy TUNGSTEN CARBIDE Anvils will actually measure Out-of-Roundness, Ovalness & Taper.

Ask for Illustrated Circular — Code GIOFF

Sold thru Tool Supply Houses

Ask for Demonstration

GEO. SCHERR CO., INC.

COMPLETE LINE OF PRECISION INSTRUMENTS

200 ND LAFAYETTE STREET • NEW YORK 12, N.Y.

▲ For more details circle NED-777 A5 on enclosed inquiry slip ▲

NEW!

Manifold equipped with five simultaneous, instantaneous-acting cylinders.

"Helping Hands" for Hundreds of Jobs!

Now . . . miniature pneumatic cylinders . . . smaller than your fingers, with power to do hundreds of activating, holding, control, or feeding jobs. In electrical or mechanical testing, assembly, control, holding or work feeding setups . . . operated automatically or by foot valves . . . they help you produce better products, faster at lower cost by supplying workers with extra fingers and hands!

The Clippard Miniature Pneumatic Cylinder is just 2¹⁄₁₆" long x ⁷⁄₁₆" diameter with maximum ⅜" stroke and spring return; operates from air line on as little as 12 psi. 12-port manifold and complete line of fittings available.

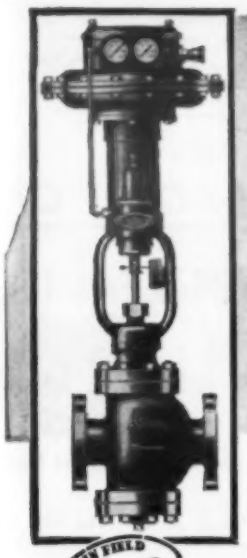
Illustrated literature, including power and static data, dimensional drawings, specifications and price list . . . free on request by writing.

***Clippard* INSTRUMENT LABORATORY, INC.**

7390 Colerain Road, Cincinnati 24, Ohio

Manufacturers of R. F. Coils and Electronic Equipment

▲ For more details circle NED-778 A5 on enclosed inquiry slip ▲



FISHER

WIZARD CONTROLLERS

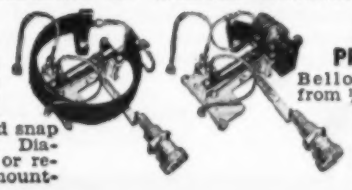
YOU'LL ALWAYS SEE THEM WHERE RELIABILITY COUNTS AND DEPENDABILITY IS A MUST

IN FIELD PROVED SERVICE

The ingenious, simply-designed mechanism of Fisher Wizard Controllers provides extreme accuracy and dependability in pressure control. They are individually built to meet your exact operating conditions, and are guaranteed to give satisfactory performance.

THE "BRAINS" OF WIZARD CONTROLLERS

HIGH PRESSURE
Bourdon tube pressures from 5 to 10,000 P.S.I. Throttling and snap acting types. Diaphragm, yoke or remote panel mounting.



LOW PRESSURE
Bellows pressure from ½ to 15 P.S.I. Diaphragm, yoke or remote panel mounting.

FISHER GOVERNOR COMPANY • Marshalltown, Iowa

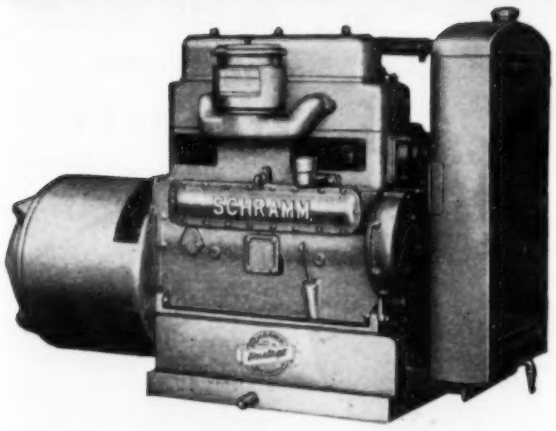
▲ For more details circle NED-779 A5 on enclosed inquiry slip ▲

New

Write for this free booklet—Form 1543

MARLIN-ROCKWELL CORPORATION
Exec. Offices Jamestown, N. Y.

▲ For more details circle NED-780 A5 on enclosed inquiry slip ▲



Direct Motor Drive Compressor With Cooling Unit

- NO ELABORATE FOUNDATIONS WHEN INSTALLING THE MODERN SCHRAMM AIR COMPRESSORS.
- VIBRATIONLESS . . . EASY TO MOVE . . . EASY TO INSTALL.
- FURNISHED COMPLETE WITH ALL NECESSARY ACCESSORIES.
- SIZES FROM ½ TO 150 HORSEPOWER, DIRECT CONNECTED, V-BELT DRIVE AND TANK MOUNTED.

Write for Catalog 5110-A

SCHRAMM, INC. THE COMPRESSOR PEOPLE WEST CHESTER PENNSYLVANIA

▲ For more details circle NED-781 A5 on enclosed inquiry slip ▲

New Processes & Materials

EXTERIOR MASONRY PAINT
waterproof type "breathes" vapor

Exterior masonry surfaces such as brick, stucco, concrete block and cement-asbestos shingles can be waterproofed with Cementhide rubberized masonry paint. It lets water, in the form of vapor, pass through the film from interior to exterior, thus preventing peeling caused by paint blisters. A water emulsion paint, it can be applied by brush, roller coater or spray without need for primer or sealer. Applicators are cleaned in warm, soapy water. Eight colors and white are available. Coverage is 150 to 350 sq ft per gallon, depending on porosity of surface. Made by **Pittsburgh Plate Glass Co.**, Dept. NED, 632 Ft. Duquesne Blvd., Pittsburgh 22, Pa.

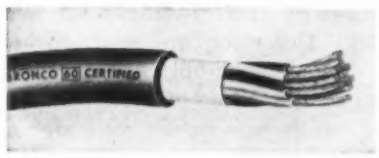
▲ For more details circle NED-782 A5 on enclosed inquiry slip ▲

PROTECTIVE FILM
will not dull galvanizing

Proseal D-36, a chromate treatment for hot dip galvanized surfaces, provides good resistance to formation of white corrosion products without discoloring the galvanizing. In continuous mill use, minimum of zinc dilution and good resistance to corrosion in pack tests were noted. Red liquid is packed in 12-gal carboys and in use, its life is sufficiently long to eliminate desirability of analytical control. Made by **Poor & Co.**, Promat Div., Dept. NED, 851 S. Market St., Waukegan, Ill.

▲ For more details circle NED-783 A5 on enclosed inquiry slip ▲

FLEXIBLE CONTROL CABLES
available with 5 to 24 conductors



Outer protecting jacket of Bronco 60 flexible control cables contains high percentage of neoprene which renders it resistant to oil, grease, heat, cold, flame, oxygen, sunlight, acids, alkalies and hydraulic fluid. Cables have from 5 to 24 conductors in sizes 18 through 10 AWG. Insulation over flexible annealed electrolytic copper conductors is heat resistant type RH rubber. Single wires are coded with permanent colors. Name, type, size, number of conductors, rated voltage and flameproof approval number (on sizes 14 and larger) is vulcanized in the sheath. Made by **Western Insulated Wire Co.**, 2421 E. 30th St., Los Angeles 58, Calif.

▲ For more details circle NED-784 A5 on enclosed inquiry slip ▲

NONSLIP FLOOR WAX
fortified with plastic emulsion

No. 1 prime yellow carnauba wax is contained in water-based Super Westwax floor wax which is fortified with Mirite, a durable and transparent plastic emulsion. Wax dries to a hard, lustrous sheen without buffing or polishing. A single application is usually adequate for normal floor protection. Film has unusual wear resistance and will not yellow or discolor even white floors. It also resists spotting, peeling and whitening. UL-listed as an antislip floor maintenance product, wax is especially suitable for office areas, public buildings and institutions. Photo shows lab technician checking wax's wear-resistance with Taber abrasion-test machine. Developed by **West Disinfecting Co.**, Dept. DE, 42-16 West St., Long Island City 1, N. Y.

▲ For more details circle NED-785 A5 on enclosed inquiry slip ▲

HERE'S THE ANSWER TO "TRAVERSE and FEED" AND "CLOSE and HOLD" OPERATIONS !

DUDCO's new PF-100 Series DOUBLE PUMPS with VALVE PANELS...give you 2000 psi "Variable Delivery" Functioning with the Economy and Reliability of Constant Delivery Operation . . . eliminate circuit components and reduce piping . . . assure top system efficiency and increase and improve production from Presses, Casting and Molding Machines, Closing and Clamping Devices, Machine Tools.

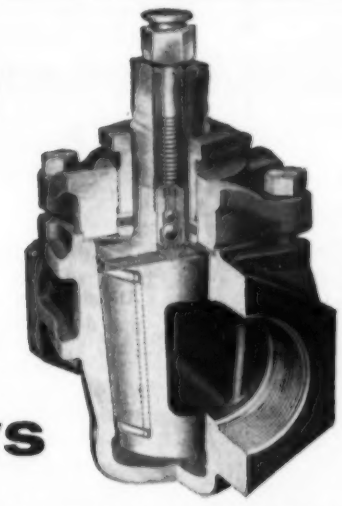
TWO VANES ARE BETTER THAN ONE!
The hydraulically balanced DUAL-VANES in DUDCO Pumps, as contrasted with conventional designs, maintain MULTIPLE AREAS OF CONTACT ON THE CAM RING . . . doubling the number of effective barriers to slippage and power loss. This patented principle is an exclusive DUDCO feature!

Write for Bulletin DP-308 . . . contains performance data, delivery control circuits, installation drawings; suggests applications. It's Free!

DUDCO DIVISION
THE NEW YORK AIR BRAKE COMPANY
1708 EAST NINE MILE ROAD • HAZEL PARK • MICH.

▲ For more details circle NED-786 A5 on enclosed inquiry slip ▲

Find Out All The Ways



Rockwell-Nordstrom Valves
Can Cut Costs For You

In your plant there are probably scores of places—air conditioning, fuel, hydraulic and compressed air lines, and degreasing equipment for example—where Rockwell-Nordstrom valves can cut costs by doing the job better, longer, for less money per year. Here's why you can't buy a better valve than Rockwell-Nordstrom:

—*Sure shut-off.* A film of pressurized lubricant around the plug provides a tighter seal than is possible with ordinary metal-to-metal contact.

—*Easy, quick operation.* Rockwell-Nordstrom valves *glide* open and shut on lubricant, which also hydraulically jacks the plug free from the seat. And because only a one-quarter turn is needed, positive controlled response is assured. They're ideally suited for plant automation.

—*Longer life.* Lubricant prevents grinding wear of metal-to-metal friction. Rockwell-Nordstrom valves last longer—cut maintenance, replacement and down time cost. And initial cost is no more than ordinary valves!

Send For Free Facts

A booklet showing Nordstrom principles and applications in industrial and process plants is yours for the asking. Send the coupon today. *Canadian Valve Licensee: Peacock Brothers Limited*

ROCKWELL MANUFACTURING COMPANY
Pittsburgh 8, Pennsylvania — Dept. 2-A

☐ Please send me Bulletin V-215.
☐ Please send name of nearest Rockwell-Nordstrom industrial distributor.

Name_____ Title_____
Company_____
Street_____
City_____ Zone____ State____

▲ For more details circle NED-787 A5 on enclosed inquiry slip ▲

JUNIOR *Utility* OVENS

- Low cost
- Easy to operate
- Minimum maintenance

4 MODELS to choose from

Model	Internal dimensions	Temperature range
CA 250	22" w by 20" d by 23" h	up to 250°F
CA 550	20" w by 17" d by 21" h	100° to 550°F
CA 650	20" w by 17" d by 21" h	100° to 650°F
CA 1000	18" w by 15" d by 19" h	100° to 1000°F

Here is a new line (4 models, temperature ranges up to 1000°F) that incorporates every possible advantage of experienced oven design. Use the Jr. Utility Oven for economical manufacturing, product control, sample testing, etc. External dim. 24" x 24" x 34" high. Handsome gray hammertone finish. Write for complete data on new, advanced features. Some territories open for representatives, distributors and resale outlets.

NEW ENGLAND OVEN & FURNACE COMPANY INC. ORANGE, CONN.

NEW ENGLAND OVEN & FURNACE CO.
POST ROAD, ORANGE, CONN.

▲ For more details circle NED-789 A5 on enclosed inquiry slip ▲

Add Years to Air Equipment Life— Use Filtered Air

All air lines collect moisture. Rust and dirt enter the lines, too, to clog lines, and shorten equipment life.

Give your air equipment top protection with Schrader Air Line Filters ahead of each air control unit. Schrader filters offer no restriction to full air flow, even after long use. Moisture is trapped in the bottom of the filter, can be drawn off through a drain cock.

See how Schrader Air Line Filters and other Schrader accessories can add to your effective use of air. Send for the Schrader catalog today.

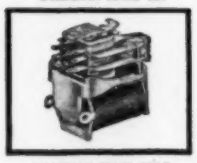
A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Avenue, Dept D-48, Brooklyn 38, New York

▲ For more details circle NED-790 A5 on enclosed inquiry slip ▲

The many *extra values* you receive with Guardian Relays more than justify the fair price you pay, clearly demonstrated by the following considerations:

1. True conformity to specifications, the very finest materials and top quality, uniform construction are incorporated in every Guardian Relay.
2. Costly production delays, due to rejects, are virtually eliminated by Guardian Relays.
3. Field breakdowns and expensive replacements, usually encountered with inferior substitutes, are greatly reduced, even totally eliminated when you specify Guardian Relays.

GUARDIAN SERIES 250


GUARDIAN SERIES 595-P

Write FOR GUARDIAN CATALOG 10

GUARDIAN ELECTRIC
1626-A W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

▲ For more details circle NED-791 A5 on enclosed inquiry slip ▲

New Literature & Catalogs

Materials Handling Containers

Pittsburgh Steel Products Co.—"Duty Designed Cargotainers" is title of 24-page illustrated bulletin that gives technical details of these welded steel wire mesh containers. Case histories are employed to explain the advantages offered in materials handling operations with these units. Also discussed are welded wire pallets and industrial bulkheads.

▲ For more details circle NED-792 A5 on enclosed inquiry slip ▲

High-Strength Structural Bolts

Republic Steel Corp.—8-page illustrated bulletin 648 is descriptive of high-strength structural bolts which assure low cost, safe structural fastening. Specifications for assembly of structural joints using these bolts are presented in technical section.

▲ For more details circle NED-793 A5 on enclosed inquiry slip ▲

Power Transmission Equipment

Browning Mfg. Co.—Single and multiple groove and variable pitch sheaves; V-belts; fractional, multiple, steel cables, super, Griproll and Griplink belts; fixed bore and bushed type, rigid and flexible couplings; chain couplings with and without covers; paper pulleys, keystock; hubs for split bushings; set collars; type A and B and bushed roller chain sprockets and roller chain are among products described and illustrated in 20-page catalog GC-101-B.

▲ For more details circle NED-794 A5 on enclosed inquiry slip ▲

Stainless Steels

Carpenter Steel Co.—Both the basic No. 20 stainless steel alloy and columbium-stabilized analysis described in 20-page illustrated brochure 108A are sulphuric acid resisting steels. Information on corrosion resistance, applications and working characteristics are given. Field reports describe performance under varying corrosive conditions. Properties are given.

▲ For more details circle NED-795 A5 on enclosed inquiry slip ▲

Resistance Welding

Sciaky Bros., Inc.—Industrial applications, manufacture and service, principles of operation and types of electric resistance welding machines are subjects of four sections of 12-page illustrated general machine catalog No. 333. Described are spot, rocker arm, seam, roll-spot, special, flash-butt and portable resistance welders and complete line of accessories.

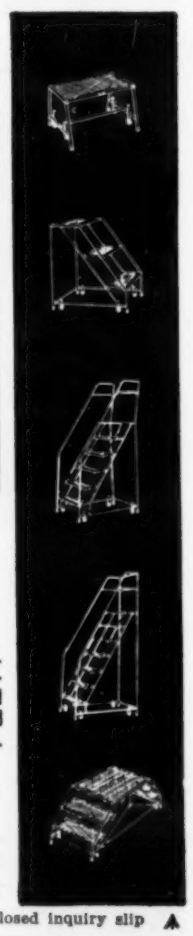
▲ For more details circle NED-796 A5 on enclosed inquiry slip ▲

Loading Dock Ramps

Rowe Methods, Inc.—Engineering details and other information on the use and installation of hydraulic adjustable ramps for loading docks are presented in illustrated 4-page bulletin. These ramps provide a continuous automatic connection between dock and truck or rail car.

▲ For more details circle NED-797 A5 on enclosed inquiry slip ▲

NOW... for work levels up to 15 feet high



Ballymore all-welded-steel Safety-Step Ladders available from one to twelve steps. Over 100 models to choose from. Portable—they roll. Up to 9 steps, they automatically lock to floor when you step on—9 steps and over, they have step-on brake casters at front. Send for catalog. The Ballymore Company, Wayne 3, Pa.

Ballymore SAFETY LADDERS

Safety-Step LADDERS

▲ For more details circle NED-798 A5 on enclosed inquiry slip ▲

It's A *NEW ADDITION* TO THE DICO WHEEL FAMILY

DEMOUNTABLE HUB WHEELS

For Trailers • Farm Equipment • Industrial Use

4.00 x 8
(16.25" outside rubber diameter)

(5) Bolt Hub with 4½", 4¾" and 5" bolt circles. The hub in this wheel will take various automotive type wheels having the above bolt circle requirements.

WIDE BASE

5.00 x 8 (16.4" outside rubber diam.) **5.50 x 8** (18.36" outside rubber diam.)

(5) Bolt Hub—4½" bolt circle. 4¼" wide base rims accommodate tires with greater air volume and heavier load capacity. Less air inflation gives greater shock absorption, assuring smoother, cushioned riding. Get all details NOW on the new DICO Demountable Hub Wheels.

DICO

WRITE FOR NEW DICO WHEEL CATALOG

DES MOINES 5, IOWA

▲ For more details circle NED-799 A5 on enclosed inquiry slip ▲

BUILT FOR THE JOB *Bond* CASTERS for faster, easier materials handling

THE kangaroo has a real handling problem . . . but Nature gave it the jump on its neighbors with a handy carrying pouch, built for the job. And you can get the jump on your materials handling problems by specifying Bond built-for-the-job Casters. For dependability, economy and trouble-free service, your best buy is Bond!

36-A Series —Double Ball Race Swivel Caster

3-A Series —Single Ball Race Swivel Caster

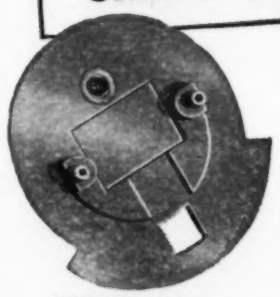
1-A Series —Stationary Caster

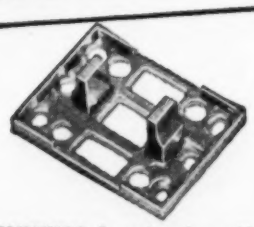
See your industrial distributor—he has the right Bond Casters built-for-your-jobs.

BOND FOUNDRY & MACHINE CO.
Manheim, Pa.

▲ For more details circle NED-800 A5 on enclosed inquiry slip ▲

What's the *least costly way* of making these SMALL METAL PARTS?





STAMPING? Several tools would be required—metal wasted—lugs added later. Die-cast by Dollin as one rigid piece, at stamping press speed.

COINING? The lugs would have to be added later. Die-cast by Dollin as one piece, at high speed.

(Parts Actual Size)

SCREW MACHINE? Each feature requires a separate operation. Die-cast by Dollin in one operation, at screw-machine speed.

Compare the costs of your small parts (in the size range of 3 per lb. to 1000 per lb.) with the costs of this versatile, high-speed method. Piece-costs, tool costs, scrap loss, machining and assembly operations—you may be able to reduce one, two or *all*. Send prints or samples for quotation—engineering advice at no obligation. *Dollin Corp., 612 So. 21st St., Irvington 11, N. J.*

DOLLIN Small Zinc DIE-CASTINGS — Folder and Samples on Request

▲ For more details circle NED-801 A5 on enclosed inquiry slip ▲

A NEW FASTENER...A NEW TYPE OF FASTENER

DIE-CAST ROUND-HEAD THUMB NUTS & SCREWS with GRC's exclusive WIDE GRIP feature

Generous width assures firm, comfortable grip; rounded, scalloped edges.

Mass produced in rust-proof zinc alloy at low cost, with eye appeal to help sell your product.

3 standard head diameters; all standard thread sizes; both open-end and closed-end thumb nuts; thumb screws with and without shoulders. Write today for samples, prices and bulletins . . . or ask for quote on special needs.

As in all other GRC quality fasteners—wing nuts, cap nuts, wing screws—threads are clean and accurate.

GRIES World's Foremost Producer of Small Die Castings

GRIES REPRODUCER CORP.

143 Beechwood Ave., New Rochelle, N.Y. Phone: NEw Rochelle 3-8600

▲ For more details circle NED-802 A5 on enclosed inquiry slip ▲

SAFE, EFFICIENT INDUSTRIAL CLEANING COSTS LESS----WITH NEW BENNETT UNIVERSAL AIR-OPERATED CLEANER!

The Bennett cleaner is *safe* because it is completely non-electrical. There is no danger from sparking, because there are no *moving parts*

The Bennett cleaner *saves time and money!* It's light and highly portable. Cleans walls, shelves, beams, storage bins and other out-of-the-way surfaces with a minimum of labor!

Powerful suction developed by compressed air (approximately 90 lbs. pressure) adequate for all industrial applications. Highly efficient WET or DRY pickup.

Adaptable to any industrial application! Picks up metal chips, glass particles, etc. Interchanging bag with hose permits removal of liquids from any normal surface or tank.

NO MOVING PARTS! Unlimited life . . . no danger from sparking.

COMPACT—POWERFUL! Highly efficient WET or DRY pick-up.

LIGHT—PORTABLE! Body of aluminum casting.

EASY TO OPERATE! Designed to reduce operator fatigue. Hand-operated metering valve.

Special fittings and brushes make the new Bennett cleaner adaptable to any industrial application. Interchanging bag with hose makes it adaptable for removal of liquids from any normal surface or tank.

COMPLETE UNIT WITH 5" ALUMINUM NOZZLE, AND BAG $29.95 EACH

NO ELECTRICAL CONNECTIONS NECESSARY!

M-M-A, Inc., Lancaster, Pa.

▲ For more details circle NED-803 A5 on enclosed inquiry slip ▲

AT THE FRONTIERS OF PROGRESS YOU'LL FIND...

don't guess...

select!

get your copy of the new AIRCO Electrode Pocket Guide —it's free

Picking the *right* electrode is a snap—with an Airco electrode pocket guide. This 42-page catalog presents the most commonly used Airco electrodes along with helpful information regarding the factors to be considered when picking an electrode for a specific job. Provides details as to the electrodes to use in welding mild steels, stainless steels, cast iron, and many other applications. Illustrated. See your local Airco Authorized Dealer or write for Airco Catalog 1318.

AIRCO

AIR REDUCTION

60 East 42nd Street New York 17, N. Y.

Divisions of Air Reduction Company, Incorporated, with offices and dealers in most principal cities

Air Reduction Sales Company

Air Reduction Pacific Company

Represented Internationally by Airco Company International

▲ For more details circle NED-804 A5 on enclosed inquiry slip ▲

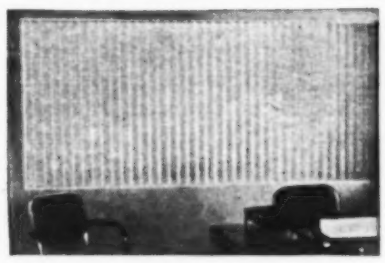
New Processes & Materials

BAR STOCK CALCULATOR for aluminum screw machine parts

Amount of aluminum stock required for making 1000 screw machine parts with combination dimensions ranging from ¼ to 3 in. long and ⅛ to 3½ in. diameter is easily estimated with this slide rule type calculator. It also gives pounds per foot, feet per pound and fraction to decimal equivalents for round and hexagon aluminum screw machine stock in diameters ranging from ⅛ to 8 in. in available alloys. Another table lists typical mechanical properties. Available free from **Kaiser Aluminum & Chemical Corp.**, Industrial Service Div., 1924-N Broadway, Oakland 12, Calif.

▲ For more details circle NED-805 A5 on enclosed inquiry slip ▲

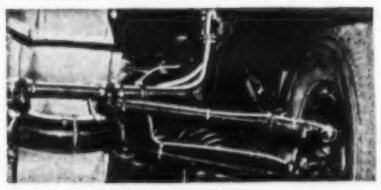
PLASTIC PANELS with transverse corrugations



Reduction in number of laps and simplification of installation in many cases result from use of Resolite translucent structural panels with corrugations running the width, rather than the length of the sheet. Photo shows use as an office partition. Material is available in the 2½-in. corrugation in lengths up to 12 ft and widths up to 46 in. All standard colors are offered. Made by **Resolite Corp.**, Dept. D-2, Zelienople, Pa.

▲ For more details circle NED-806 A5 on enclosed inquiry slip ▲

HIGH PRESSURE NYLON TUBING developed for lubrication lines



Regardless of temperature or weather conditions, Nylaflow nylon tubing remains flexible for use with moving parts. It can be flexed around a ½-in. mandrel at −110° F and retains its original shape at temperatures up to 475° F. Developed originally for high pressure lubrication lines on passenger cars, the tubing is available with burst strengths of 1000 psi (type T) and 2500 psi (type H). Easily installed tubing is made in sizes from ⅛ to ⅜-in. OD. It suffers no fatigue from vibration or constant flexing and is unaffected by salt, gasoline, oils, greases and normal solvents. Standard metal flare and compression type fittings are recommended. Made by **Polymer Corp. of Pa.**, 438 Walnut St., Reading, Pa.

▲ For more details circle NED-807 A5 on enclosed inquiry slip ▲

CLEANING MATERIAL dissolves rust, scale and corrosion

Rust, scale, lime and corrosion deposits are readily removed from metal and other surfaces with Brulin Rust & Scale Solvent. This cleaner also strips light oil, grease and dirt films. Cleaned surface is suitable for painting, if desired. Used cold, it will clean heat exchangers, valves, pipes, automotive parts and other equipment of grease and rust. It can be applied by swab, spray or in circulating dip tanks. It will also etch and neutralize alkali of fresh concrete to provide good adhesion for paint. Made by **Brulin & Co.**, Dept. R-203, 2939 Columbia Ave., Indianapolis 7, Ind.

▲ For more details circle NED-808 A5 on enclosed inquiry slip ▲

Quick, Safe and Low Cost way to handle . . . . COILS

SABIN COIL TRUCK

Wire or Strip Coils, Box Strapping, Wheels, Tires, Lathe Chucks or Face Plates, etc.

TO LOAD, you run truck up to article, passing arm through hole, and pull back on handle—that's all. Third or Follower Wheel makes travel easy and safe.

WRITE FOR BULLETIN

The Sabin Machine Co.

6540 Carnegie Ave.

CLEVELAND 3, OHIO

OTHER SABIN TRUCKS: Barrel, Keg, Box and Package Trucks; Tote Pan, Carboy, Shop and Special Trucks.

▲ For more details circle NED-809 A5 on enclosed inquiry slip ▲

FREE BULLETIN on SURFACE ROUGHNESS tells . . .

- How to establish roughness specifications for parts that are in production—and for parts of new design.
- How to show roughness specifications on drawings and shop prints.
- Practical advantages of surface roughness specification.

ALSO gives tips on MEASURING surface roughness in the shop—and briefly tells why most plants use the PROFILOMETER for doing this.

Write Today!

Ask for BULLETIN L21.

Profilometer is a registered trade mark.

MMC MICROMETRICAL MANUFACTURING COMPANY

333 S. MAIN ST. ANN ARBOR, MICH.

▲ For more details circle NED-810 A5 on enclosed inquiry slip ▲

HOW TO INSURE TOP METALWORKING PERFORMANCE for only $1.00

Send for a trial order of CMD ANTI-SCORING LUBRICANTS

For top performance on lathe centers, grinding, press fit, stamping, die posts and many other operations—CMD ANTI-SCORING Lubricant can't be beat. It makes your operations smoother, faster, easier and of course more profitable. Prevents scoring, seizing, galling...all bugaboos in modern machining work. This trial order will start *you* on *your* way to top performance where a high pressure lubricant is needed. You will be surprised to find how long it lasts. Get yours today in both oil and grease consistencies.

TRIAL ORDER—TWO FOUR OZ. TUBES $1.00

Send me my order of CMD Lubricants right away! { Bill me / Bill my company

Name_____

Company Name_____

Address_____

City_____ State_____

Chicago Manufacturing and Distributing Company

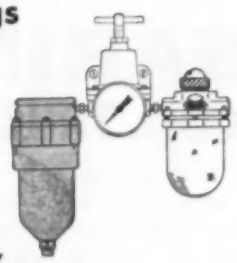
1902 West 46th St., Chicago 9, Illinois

CHICAGO MANUFACTURING & DISTRIBUTING CO.

▲ For more details circle NED-811 A5 on enclosed inquiry slip ▲

NORGREN automatic-drain filter

new modern filtering unit essential in aerosol lubrication of bearings



- removes abrasive dirt automatically
- removes corrosive moisture automatically
- drains automatically

WRITE FOR COMPLETE DATA

See our exhibit at Plant Maintenance Show, Chicago, Jan. 24-27, Booth 314

C. A. Norgren CO.
3405 So. Elati, Englewood, Colo

For more details circle NED-812 A5 on enclosed inquiry slip

Now industry's three-phase motors can have full three-phase protection with standard in-stock motor control!

Many motor users have proved *two* overload relays no longer adequately protect three-phase motors. Motor burn-outs are so widespread that Section 4327 of the National Electrical Code, recently amended, now permits authorities to *require* three overload relays in three-phase motor control . . . a provision already enforced in some areas. Safety experts and power engineers say that soon three-phase motor control with less than three overload relays will be unacceptable.

Many industrials plagued by recurring motor burn-outs and intolerable operating interruptions have changed to three-relay control. But such changeovers have been slow to effect and costly as no standard control was available with three overload relays. Special constructions and enclosures have always been required.

This is no longer true. The new Cutler-Hammer ☆ ☆ ☆ Motor Control offers *three* overload relays in all standard starter enclosures. You pay only for the third relay, nothing additional for special engineering or manufacture. No extras. No delays. It is *in stock* at your nearby Cutler-Hammer Authorized Distributor. Order it today and use it tomorrow. CUTLER-HAMMER, Inc., 1377 St. Paul Avenue, Milwaukee 1, Wis.

CUTLER-HAMMER ☆ ☆ ☆ MOTOR CONTROL C-H

For designers of machines and special control panels

Unit panel construction of C-H ☆ ☆ ☆ Motor Control makes it easy to incorporate starters with three overload relays. Require no more space than starters with two overload relays. NEMA Sizes 0, 1 and 2 starters and parts available as components. Also control relays with interchangeable NC-NO contacts. Write or wire today for latest design data.

For more details circle NED-813 A5 on enclosed inquiry slip

New Literature & Catalogs

Special Machining Projects

Connecticut Mechanical Industries, Inc.—Case histories of routine, intricate and seemingly impossible special machining projects are depicted in 20-page brochure 754. Highlights include graphic description of how individual tooling problems were overcome and how minute tolerances were met. Company facilities are also listed.

For more details circle NED-814 A5 on enclosed inquiry slip

Good Office Lighting

Sylvania Electric Products Inc.—"Good Lighting is Good Business" is title of 20-page booklet on the economics and mechanics of good office lighting. It covers, nontechnically, layout and planning, maintenance, room finishes and color, quantity of light, fluorescent vs. incandescent, light distribution, natural lighting and various lighting systems.

For more details circle NED-815 A5 on enclosed inquiry slip

Product Publicity Guide

1955 edition of the "Publicity Checker" lists 3058 publications and codes them to show types of publicity material used by each. The 256-page work is intended to simplify problem of handling editorial publicity. Code numbers refer to following types of publicity: new products, trade literature, general news, personnel, coming events, by-line articles, staff articles, financial, letters, questions and answers, book reviews, contracts awarded, reviews of films and entertainment. Publication is spiral bound with fabricoid cover and is available for $15.00 from R. H. Bacon & Co., 343 S. Dearborn St., Chicago 4, Ill.

For more details circle NED-816 A5 on enclosed inquiry slip

Cemented Carbide Tools & Blanks

General Electric Co., Carboloy Dept.—24-page Brief-A-Log GT-285 gives latest price changes and specifications on all standard cemented carbide tools and blanks. Throw-away inserts, new saw tips, solid and brazed type woodworking knife blanks, right and left-hand offset threading tools and blanks for roller turner tools are covered.

For more details circle NED-817 A5 on enclosed inquiry slip

Sheet Metal Air-Controlling Products

Duro-Dyne Corp.—Products for sheet metal, air conditioning, heating and ventilating fields are described in three available bulletins. Air-controlling vanes, duct connectors and multi-bladed damper are covered in an 8-page folder, while other two pieces describe damper regulators and portable spot welders, metal punches and file and solder iron handles.

For more details circle NED-818 A5 on enclosed inquiry slip

Gas-Engine-Driven Compressors

Clark Bros. Co.—Model TLA two-cycle gas-engine-driven compressors in brake horsepower ratings of 2000, 2350 and 3300 are described in detail in 22-page bulletin 134. These turbocharged units are built with three, four and five horizontal compressor cylinders, depending on model and application. Supplemented with this publication is an illustrated article by company design engineer entitled "Recent Advances in Engine and Compressor Design."

For more details circle NED-819 A5 on enclosed inquiry slip

Dictionary of Electronic Terms

Over 3500 terms used in television, radio and industrial electronics are clearly defined in 72-page illustrated "Dictionary of Electronic Terms." Definitions cover modern techniques and equipment and touch upon the nuclear physics field also. Edited by Gordon R. Partridge, Ph.D., this booklet is a reference guide for all interested in electronics. Listed as 37 K 756, booklet will be sent upon receipt of 25 cents to cover mailing costs by Allied Radio Corp., 100 N. Western Ave., Chicago 80, Ill.

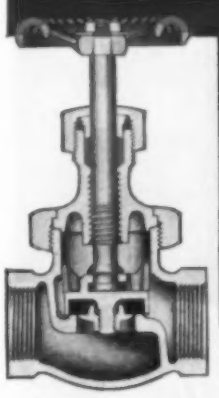
For more details circle NED-820 A5 on enclosed inquiry slip

Air Motors, Compressors, Vacuum Pumps

Gast Mfg. Corp.—How 35 product component problems were solved with rotary air motors, air compressors and vacuum pumps is shown in 12-page bulletin 1054-48. Jobs described include such items as rotary-air-motor-powered high vacuum disk valve, vacuum or air pressure pumps installed on photo vending machines, packaged steam boilers, automatic screw machines and hoists for materials handling.

For more details circle NED-821 A5 on enclosed inquiry slip

A NEW DISC...A "NEW" VALVE



Crane No. 7 Brass Valves with Quick-Change Composition Disc

Save time, trouble, and money by standardizing on Crane Composition Disc 150-Pound Globes, Angles and Checks. Simple to service . . . no need for big inventory of repair parts. When a leak shows up, make a "new" valve—simply by replacing the disc holder assembly.

The composition disc takes most of the normal wear—stands up well under ordinary usage—seats easily even on air and gas—absorbs foreign particles that might cause leakage in metal disc valves. Rugged construction throughout. Sizes ⅛ to 3-inch. For steam, hot and cold water, air, oil, gas, gasoline, and many other fluids.

CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

For more details circle NED-822 A5 on enclosed inquiry slip

NEW ELECTRIC VIBRATOR

Quiet!

A compact, powerful unit designed to speed the flow of stubborn materials through all types of bins, hoppers and chutes.

Obtainable in all voltage, phase and cycle requirements.

Write today for complete literature.

Bin Stuck Lately?

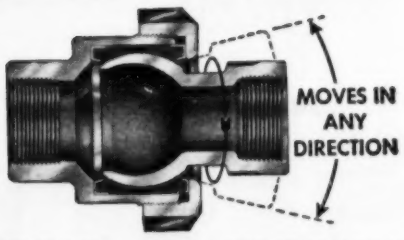
THE CLEVELAND VIBRATOR CO.

2744 Clinton Avenue • Cleveland 13, Ohio

For more details circle NED-823 A5 on enclosed inquiry slip

BARCO *Flexible* **BALL JOINTS**

—when you need movable joints in piping handling



STEAM, OIL, CHEMICALS

Send for New Bulletin No. 215

- Provides for movement in piping—up to 40° side flexibility, plus 360° rotating movement.
- Stainless steel and chemically inert gaskets for strong chemicals. No metal-to-metal contact. Choice of body materials.
- One Barco Ball Joint does the work of two or more ordinary swivel joints because "it moves in any direction!"
- Many models available. For pressures to 7,500 psi; temperatures to 1000° F. 15 different sizes. ¼" to 12". *Ask for recommendations.* BARCO MFG. CO., 530B Hough St., Barrington, Illinois.

THE ONLY TRULY COMPLETE LINE OF FLEXIBLE BALL, SWIVEL, SWING AND REVOLVING JOINTS

For more details circle NED-824 A5 on enclosed inquiry slip

See the Peerless PACKET
before buying a hand chain hoist

You'll find that these all steel, lightweight, spur geared hoists are easily carried from place to place; can lift capacity loads smoothly and safely; cost little and are economical to maintain.

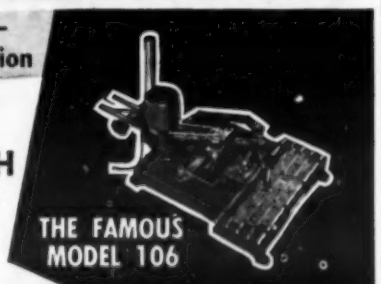
Two basic models—top hook suspension and adjustable trolley hoist type—are available in ½, 1 and 2 ton capacities. Call your Harrington distributor or write for Bulletin P-5.

THE HARRINGTON COMPANY
Makers of Hoists Since 1876
GRAVERS ROAD AT THE TURNPIKE, PLYMOUTH MEETING 16, PA.

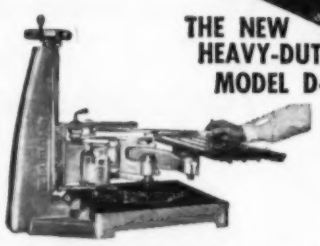
For more details circle NED-825 A5 on enclosed inquiry slip

unique in design — rugged in construction

GREEN PANTOGRAPH ENGRAVERS



THE NEW HEAVY-DUTY MODEL D-2



The three-dimensional bench Model 106 cuts costs — engraves, routs, models and profiles, giving you expert results even by unskilled workers.

The Model D-2 two dimensional heavy-duty Pantograph is a precision machine with a multitude of new features. Open on three sides, it permits complete freedom for engraving, milling, profiling large panels (up to 30" in diameter) or bulky pieces. Single, micrometer adjustment controls vertical depth of cut, automatically adjusting copy table with pantograph. Range of reduction ratios from 2-to-1 to infinity! Vertical range over 10 inches!

For complete information, write to

GREEN INSTRUMENT COMPANY
375 Putnam Ave. Cambridge, Mass.

For more details circle NED-826 A5 on enclosed inquiry slip

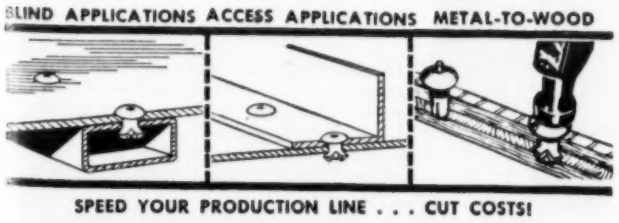
LOOK HOW EASY... AND FAST RIVETING CAN BE WHEN YOU USE SOUTHCO DRIVE RIVETS!

Rivet and Mfg. Patented.

a hammer is the only tool
...drive like nails
...automatic "pull-up" action

Fastest for:

BLIND APPLICATIONS ACCESS APPLICATIONS METAL-TO-WOOD



SPEED YOUR PRODUCTION LINE . . . CUT COSTS!

For complete data, write Southco Division, South Chester Corporation, 243 Industrial Highway, Lester, Pa.

SOUTHCO FASTENERS

©1955 Whenever two or more parts are fastened together.

For more details circle NED-827 A5 on enclosed inquiry slip

New Processes & Materials

TOOL HARDENING COMPOUND
for 0.01 to 0.02-in. case depth

Quick surface hardening of steel tools, dies, parts and cutting implements is possible with Royal hardening powder. It gives off no poisonous fumes when applied to areas heated to 1400-1700° F. Heat is maintained for 15 to 30 minutes, then part is quenched for desired temper. Case depth of 0.01 to 0.02-in. provides long tool life without brittleness for low and medium carbon steels. Made by **Anti-Borax Compound Co.**, 1508 Wall St., Ft. Wayne, Ind.

For more details circle NED-828 A5 on enclosed inquiry slip

DUPLICATE COPY PAPER
eliminates need for carbon paper

Properties of carbon paper and ordinary second sheets are combined in Autoscript, a copy paper offered in various colors. It is placed in direct contact with the original copy and its processed finish enables it to reproduce sharply and legibly any impression made on it. Up to 12 duplicate copies can be made at one time on a typewriter or with ordinary sharp pencil or ball point pen. Colors can be used interchangeably for coding purposes. Samples available on letterhead request. Made by **Pengad Cos.**, Pengad Bldg., Bayonne 85, N. J.

For more details circle NED-829 A5 on enclosed inquiry slip

EXTREME PRESSURE LUBRICANT
sprayed from aerosol dispenser

Heavy duty lubricant of the extreme pressure type can be sprayed on open gears and chains, valve stems and other equipment without preheating. Packaged in an unbreakable aerosol dispenser, Spray-Lube can be used in temperatures too high for normal grease or oil. It will not drip or "throw off" running gears and can be sprayed into places a brush or paddle cannot reach. Good adhering qualities make it a good rust preventive. Made by **Pressure Products Co.**, P. O. Box 342-A, West Chester, Pa.

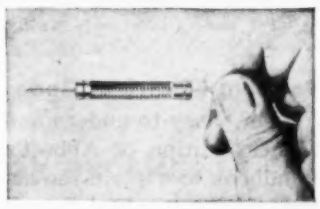
For more details circle NED-830 A5 on enclosed inquiry slip

METAL CAN ADHESIVE
thermoplastic type for side-seaming

Cascorex HM-901 adhesive for use on tinless metal containers for lubricating oils reduces leakage to a minimum. Improved side-seaming thermoplastic material eliminates the bare metal strip adjacent to the seam, making possible lithographic designs around the entire package. Made by **Borden Co.**, Chemical Div., Dept. NED-1, 350 Madison Ave., New York 17, N. Y.

For more details circle NED-831 A5 on enclosed inquiry slip

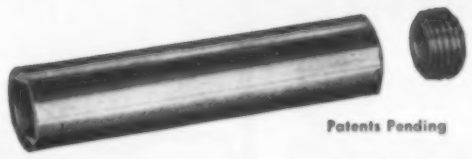
METAL FILM RESISTORS
resistances range to 200,000 ohms



Series 850 resistors are of hermetically sealed, metal film type. They are reported to fill the gap between precision wire-wound type and low cost composition type. Noble metal resistive element is deposited on inner surface of glass tube. End caps are bonded to glass to provide hermetic sealing for over 60 psi. Features include stability, temperature coefficient independent of resistance value and low reactive component of impedance. They are available in ½, 1 and 2-w sizes with resistance ranges up to 200,000 ohms. Distributed by **Daven Electronic Sales Corp.**, 199-A Central Ave., Newark 4, N. J.

For more details circle NED-832 A5 on enclosed inquiry slip

How SQUARE HOLED SLEEVES SPEED UP TOOL-MAKING!



Patents Pending

One of the most difficult problems in toolmaking can be solved easily and quickly with Sturdy Square Holed Sleeves. The perfection of broached square holes can be had in boring bars, milling cutters and many other applications at a small fraction of the cost of imperfect hand-made square holes. The Sturdy Square Holed Sleeve consists of a round sleeve with a perfectly square hole broached through the center. This hole is tapped at one end to receive a back-up screw which is furnished with the Sleeve. The Sleeve can be sweated or pressed into a drilled and reamed hole to make a perfectly square accurate hole in a very few minutes.

The Sturdy Square Holed Sleeve will save you many hours and many dollars in the making of boring bars, tool holders and other tools requiring square holes.

SLEEVES MADE IN FOLLOWING SIZES: 3/16, ¼, 5/16, ⅜, 7/16, ½, ⅝, ¾, 1"

Write for Literature

STURDY BROACHING SERVICE
23514 TELEGRAPH RD., DETROIT 19, MICH.

For more details circle NED-833 A5 on enclosed inquiry slip

Take surface temperatures quickly, accurately... with the

The handy Alnor Pyrocon is unequaled for quick, accurate reading of all surface temperatures . . . whether surfaces are metallic or non-metallic, flat or curved. Accurate temperatures are easily understood on the Pyrocon's direct reading scale face . . . without interpolation or need of conversion tables. A wide selection of thermocouples and extension arms permits adaptation to many types of service. For complete details and prices, send for Bulletin No. 4257. Illinois Testing Laboratories Inc., Room 529, 420 N. LaSalle Street, Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

For more details circle NED-834 A5 on enclosed inquiry slip

Design Data on Plastic Laminates

The *Synthane* catalog is a good source for engineering data on laminated plastics. 31 different grades of *Synthane* are described in detail; their properties and recommended uses are given.

In addition to engineering data, the catalog supplies quick reference information on available grades of *Synthane* sheets, rods, tubes, molded shapes and fabricated parts, and do's and dont's in design for using plastics. Whatever you need in laminated plastics, the *Synthane* catalog can help you find the answer. To get your copy, use the coupon below.

SYNTHANE
SYNTHANE CORPORATION
N. E. RIVER ROAD, OAKS, PENNA.
Manufacturers of Laminated Plastics

Please send me a copy of the Synthane catalog.

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Address_____

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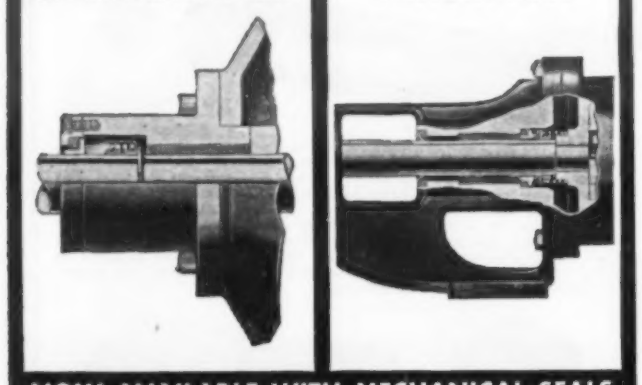
For more details circle NED-835 A5 on enclosed inquiry slip

VIKING

150 GENERAL PURPOSE PUMPS | 54 HEAVY-DUTY PUMPS



NOW AVAILABLE WITH MECHANICAL SEALS

General Purpose all-weather Viking Pumps in sizes from 20 to 200 gpm and Heavy-Duty Viking pumps in sizes from 10 to 300 G.P.M. can now be furnished with mechanical seals. The seals are packaged units with a minimum of parts and no chance for mis-assembly. Both types of pumps equipped with mechanical seals also feature carbon graphite bearings requiring no lubrication.

For leak-proof, long-lived service, specify mechanical seal equipped General Purpose or Heavy-Duty Viking pumps. For additional information, ask for folders SP-336G and SP-344G.

VIKING AN HONORED NAME IN PUMPING

See Our Catalog in SWEETS

VIKING PUMP COMPANY CEDAR FALLS, IOWA

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NOW! BUILD YOUR OWN Pallet Racks, Rails and Shelving...with

Nu-Rail SLIP-ON FITTINGS

AN ENTIRELY NEW METHOD OF FITTING PIPE

NO WELDING! USE ALL PARTS OVER AND OVER AGAIN!

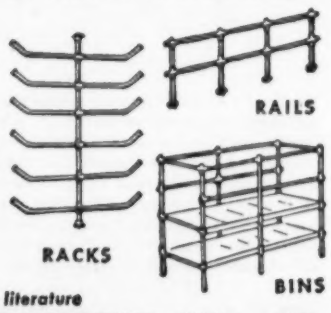
USE ANY I.P.S. PIPE OR TUBING . . . NO PIPE CUTTING . . . NO WELDING

Build them when and where you need them

SAVE MONEY, too!

Just a few examples of Nu-Rail versatility! If it's made of pipe . . . you can make it BETTER, FASTER AND FOR LESS . . . with Nu-Rail!

Distributed coast to coast.

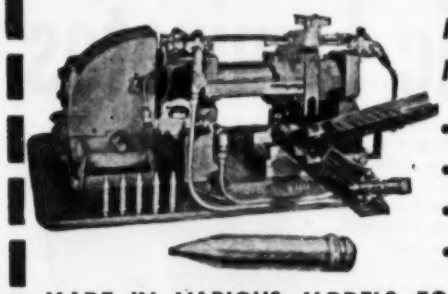


Write for literature

THE HOLLAENDER MFG. CO.
3840 Spring Grove Ave., CINCINNATI 23, OHIO

▲ For more details circle NED-837 A5 on enclosed inquiry slip ▲

ROLL YOUR MARK WITH *ACROMARK SERIES 9A



MARKING MACHINES

- FAST
- BETTER MARKS
- MARKS STEEL
- MARKS PLASTIC

MADE IN VARIOUS MODELS FOR HOT OR COLD MARKING — THE MODERN WAY

COLD marking of steel, stainless steel, other metals and materials is simple with this sturdy, powerful machine. Roller dies mark flat parts and flat dies mark round parts by rolling the part.

Dies last longer. Marks are better. QUIET production is higher. Machines have motor, air or combination drives.

ASK FOR SERIES 9AM MACHINES

*Reg. U. S. Pat. Off.

HOT marking of painted, baked enameled, and chemically finished metal parts, IN COLOR is easy to accomplish FAST in this machine. PLASTIC products that stamping would crush or otherwise damage are readily marked at high speed in it too.

Ask for Acromark series 9AH marking machines

*ACROMARK

THE ACROMARK COMPANY
7-11 MORRELL ST., ELIZABETH, NEW JERSEY

▲ For more details circle NED-838 A5 on enclosed inquiry slip ▲

New Literature & Catalogs

Reinforced Grinding Wheels

Colonial Abrasive Products Co.—Straight, recessed and type 11 flaring cup wheels for portable grinders are available with Grindaway high-strength metal safety rings embedded in the usable portion of the wheel. High speed resinoid portable grinding wheels, made in diameters up to 8 in., are described and illustrated in 4-page bulletin "An Increased Safety Factor!"

▲ For more details circle NED-839 A5 on enclosed inquiry slip ▲

Rivets, Nails, Screws, Small Parts

John Hassall, Inc.—Cold-forged threaded, fluted and knurled specialties; uncommon nails and escutcheon pins; copper nails with various nail point types; special rivets with various head types; and annular threaded, drive and machine screws are briefly described and illustrated in 12-page bulletin No. 58. Secondary operations which can be performed, metals and finishes available are also covered.

▲ For more details circle NED-840 A5 on enclosed inquiry slip ▲

Printed Circuitry Techniques

National Vulcanized Fibre Co.—"Mechanize Your Wiring . . . With Copper-Clad Phenolite" is a 12-page illustrated bulletin which covers the advantages of printed circuitry for electrical and electronic systems. Basic technical facts and design data and methods of producing the circuits are included. Specifications of Copper-clad Phenolite, widely used in printed circuits, are given.

▲ For more details circle NED-841 A5 on enclosed inquiry slip ▲

Liquid Meters

Neptune Meter Co.—Auto-Stop quantity control meters, Auto-Switch meters which actuate an electrical switch when desired quantity is metered; Print-O-Meters which provide printed tickets for each delivery or batch; and meters with simple direct reading registers are subject of descriptive 8-page illustrated bulletin 567. Meter sizes range from 1 to 4 in. and capacities are up to 500 gpm. Chemicals and liquids that can be metered successfully are listed.

▲ For more details circle NED-842 A5 on enclosed inquiry slip ▲

Dial Telephone Intercoms

Telecom, Inc.—The Telecom private dial telephone system specifically designed for intercommunications in office, factory, institutions, or wherever rapid, private contact is essential is described in series of seven bulletins numbered from TEL-118 to TEL-124. Telecoms are complete, packaged systems consisting of automatic switchboard of required size, hand telephones, paging equipment and speaker-phones.

▲ For more details circle NED-843 A5 on enclosed inquiry slip ▲

Etched Circuits & Nameplates

Eastman Kodak Co., Graphic Arts Sales Div.—Originally developed for sensitizing metal for photoengravings and photolithography plates, Kodak Photo Resist is a high-speed light-sensitive plastic coating. How it can be applied to metal plates for making etched circuits and metal nameplates as well as several other products is explained in 4-page illustrated bulletin.

▲ For more details circle NED-844 A5 on enclosed inquiry slip ▲

Rubber & Plastics Guide

General Tire & Rubber Co., Industrial Products Div.—ABC's of molded and extruded rubber and extruded plastics are found in 16-page buying guide 786. Included are specifications, terms, definitions, performance characteristics, tolerances and tables of properties available in many types of common rubber and plastics compounds.

▲ For more details circle NED-845 A5 on enclosed inquiry slip ▲

National Electrical Code

Brief, easy-to-understand language is used in the Eighth Edition of Abbott's National Electrical Code Handbook to explain the new code rules. It gives general plan, scope and intent of code requirements and discusses them in simple fashion to aid those involved in making and planning conforming electrical installations. Present edition contains all changes in 1953 code edition and book sections are numbered exactly as in the code. The 642-page book makes liberal use of photos, diagrams, tables, examples and drawings. Available for $7.50 from McGraw-Hill Book Co., 327 W. 41st St., New York 36, N. Y.

▲ For more details circle NED-846 A5 on enclosed inquiry slip ▲

TEST HARDNESS OF ANY SIZE, SHAPE, TYPE METAL . . .

anywhere . . . in one easy motion!

This 30 oz., 3 in. high tester, in 30 seconds, gives direct dial readings on the job. Just press handgrips, read dial.

Accuracy guaranteed by individual calibration. Direct reading. No calculations! No conversions. Scales corresponding to:

Rockwell "A" 35-75 Scale
Rockwell "B" 5-100 Scale
Rockwell "C" 10-70 Scale
Rockwell "15N" 70-95 Scale
Brinell Medium 100-440 Scale
Brinell Low 50-260 Scale

Write today for Booklet ET 628 or demonstration in your shop.

NEWAGE INTERNATIONAL portable metal hardness testers

ERNST PATENT #2536632. MADE IN U.S.A.

NEWAGE INTERNATIONAL, INC., 235 E. 42 ST., NEW YORK, N. Y.
DISTRIBUTORS' INQUIRIES INVITED

▲ For more details circle NED-847 A5 on enclosed inquiry slip ▲

Specify CONTINENTAL UST IDLERS

- UNIT-SEALED
- TIMKEN BEARINGS
- PRE-LUBRICATED

Saves GREASE! Saves LABOR! Saves BELTS!

If you use belt conveyors—you need Continental Idlers!

Write for Bulletin NED-116

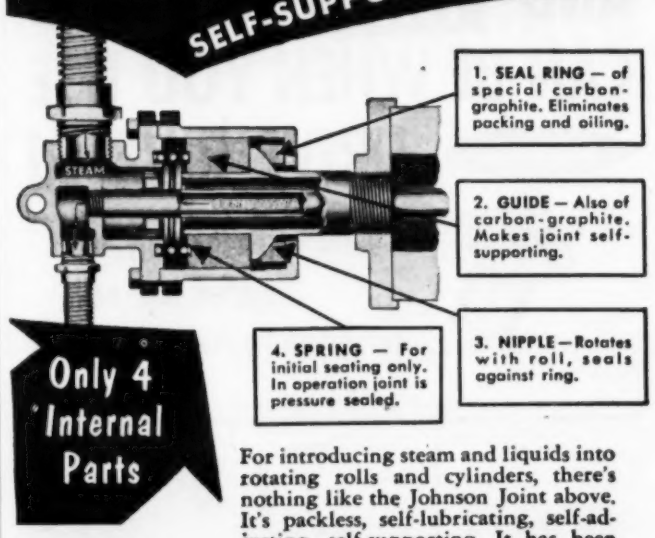
ALL SIZES! ALL TYPES! CG-5302

INDUSTRIAL DIVISION
CONTINENTAL GIN COMPANY
Birmingham 2, Ala.
ATLANTA • DALLAS • MEMPHIS • NEW YORK

▲ For more details circle NED-848 A5 on enclosed inquiry slip ▲

JOHNSON Rotary Pressure JOINT

SELF-SUPPORTING TYPE



Only 4 Internal Parts

For introducing steam and liquids into rotating rolls and cylinders, there's nothing like the Johnson Joint above. It's packless, self-lubricating, self-adjusting, self-supporting. It has been adopted by dozens of machinery makers, and is finding new uses every day.

Type SB shown handles both steam and condensate through same head; also available for through flow service, and in sizes and styles for all operating conditions. Write for literature.

The Johnson Corporation

812 Wood St., Three Rivers, Mich.

▲ For more details circle NED-849 A5 on enclosed inquiry slip ▲

FLAMELESS BLOW TORCH

for quick heat up to 750°

Use the Mamco Flameless Blow Torch on any application requiring a concentrated hot air blast. You can soften, form, mold and patch plastics, etc. easily with safety . . . The Mamco Flameless Blow Torch gives you quick heat up to 750° *without flame.*

Powerful Mamco electric motor 110-120 Volt AC and DC. Turbo type fan provides steady, strong air blast. Eight foot heavy duty cord. Double jacketed heater housing. Adjustable air intake. Order direct.

Price $28.50

WRITE DEPT. N.

Master APPLIANCE MFG. CO. RACINE, WISCONSIN

▲ For more details circle NED-850 A5 on enclosed inquiry slip ▲

SAVE 2 WAYS ON PARTS CLEANING

Kleerflo SUPER CLEANMASTER

1. low first cost 2. operates for less!

Cleans *automatically*—saves time, labor. Air agitation produces scrubbing action eliminating normal cleaning. Patented Pump continuously filters compound. Super-power JET AIR GUN provides *faster* parts drying.

Cleans all types of metal parts. Ideal for production or maintenance.

WRITE TODAY FOR DESCRIPTIVE BULLETIN

The Kleer-Flo Company

252 West 57th St., New York 19

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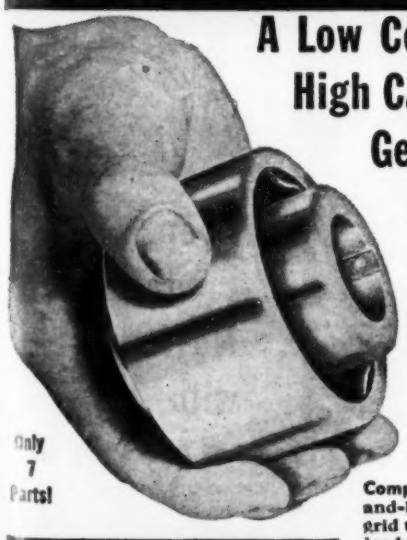
NOW! To connect ½"—1¼" Shafts:

A Low Cost, High Capacity Gear Coupling



Only 7 Parts!

Powdered steel for low price

Full 2 horsepower per 100 rpm

Can be run at high speeds

Assembled, uncoupled in seconds

Weighs only 3½ pounds

Compare with chain, pin-and-bushing, flexible disc or grid type! Transmits heavier loads at higher speeds . . . provides positive drive . . . cuts assembly, maintenance costs . . . more compact . . . safe as smooth shafting. Based on Sier-Bath's famous *simplified* forged steel Gear Couplings. Investigate! Consult "yellow pages" for local distributor . . . send for CATALOG SHEET. *Sier-Bath Gear & Pump Co., Inc., 9240 Hudson Blvd., North Bergen, N. J.*

NEW Sier-Bath MEDIUM DUTY Flexible Gear Coupling

Mfrs. of Precision Gears, Rotary Pumps, Flexible Gear Couplings

50th Anniversary Member A.G.M.A.

▲ For more details circle NED-852 A5 on enclosed inquiry slip ▲

New Processes & Materials

FINE WET SANDPAPER
for wood or metal finishing

Toughness and superior wet sanding properties of 500-A and 600-A grit Tufbak wet sanding papers adapt them for fine wood and metal finishing work. These silicon carbide grain papers are especially useful for wet-sanding lacquer finish coats. Papers are available in sheets. Made by **Behr-Manning Corp.**, P. O. Drawer 808, Troy 1, N. Y.

▲ For more details circle NED-853 A5 on enclosed inquiry slip ▲

PRESSED WOOD PANELS
prime coated for easy finishing

Smooth undercoating on Masonite Primecote Presdwood forms ideal base for light or dark paint, enamel or lacquer. Its uniformity makes finish coat easy to apply and smooth appearing. Undercoating is neutral gray color. Presdwood is offered in 4 x 8 and 4 x 12 ft sizes and in ⅛-in. standard and tempered, 3/16-in. tempered, ¼-in. tempered and ¼-in. panelwood grades. It can be used in exterior soffits; signs and displays; commercial and industrial interior partitions, ceilings, walls and wainscots; and for built-ins and cabinets. Made by **Masonite Corp.**, Suite 2039-N, 111 W. Washington St., Chicago 2, Ill.

▲ For more details circle NED-854 A5 on enclosed inquiry slip ▲

CONCRETE ADDITIVE
plastic makes patch stay put

When added to any standard mortar, plaster or cement mix, for repairing walks, driveways and masonry floors, Shure-Bond additive makes the mix much stronger and provides a durable bond which matches the unbroken piece's original strength. Even feather edges bond well. One pint of the plastic additive mixed with 20 lb of prepared patching mixture is enough to cover a 5 sq ft area ½-in. deep. Mixture is self-curing. Available from **Shure-Bond Sales Co.**, 6807-B Arsenal St., St. Louis 9, Mo.

▲ For more details circle NED-855 A5 on enclosed inquiry slip ▲

DROP CLOTHS
made of flameproofed paper

Improved Fibro industrial paper drop cloths are heavier in weight and are made of Melostrength paper which has good wet or dry strength and high scuff resistance. The flameproofed cloths are made so that the 48-in. wide roll unfolds to a 100 x 12-ft size and a 60-in. wide roll unfolds to a 100 x 15-ft size. Standard sheet sizes of 12 x 12, 12 x 15, 15 x 20 and 15 x 24 ft are also available. They offer protection from paint spray, grime, dust, moisture, frost, fire and automatic sprinkler hazards. Made by **Fibleco Illinois Corp.**, Dept. NE, 4646 N. Clifton St., Chicago 40, Ill.

▲ For more details circle NED-856 A5 on enclosed inquiry slip ▲

PLATING GENERATOR BRUSHES
metal graphite grades have long life

Prolonged brush life, minimum of commutator wear and good operating efficiency are reported for electrolytic plating generators equipped with improved metal graphite brushes. Stabilizing shunt automatically distributes the current evenly between the various brushes. Brush grades and types are available to meet practically any plating generator need. Made by **Stackpole Carbon Co.**, Dept. NED, St. Marys, Pa.

▲ For more details circle NED-857 A5 on enclosed inquiry slip ▲

Solve your Problems in

Sizes 1½" to 36" I.D.

AIR CONDITIONING
FUME CONTROL AND VENTILATION
DUST AND CHIP COLLECTION
MATERIALS HANDLING

with FLEXAUST® HOSE

The high-quality, reinforced, spiral-wire hose designed for moving air, dust, fumes, materials.

Here Are Cost-Cutting Advantages:

- EASY INSTALLATION – Unskilled labor can cut, couple or cuff Flexaust hose in a jiffy. It's so light, a child can lift it.
- DURABLE, STRONG – Flexaust hose is highly resistant to abrasives, aging, corrosion, moisture, chemical deterioration and flexing fatigue. It has a bonded, double ply, double overlap construction.
- AIRTIGHT—Ideal for pressure, suction, or gravity operations.
- HIGHLY FLEXIBLE – Can maintain large sections on sharp bends; won't kink or flatten.

WRITE TODAY for new bulletins on FLEXAUST hose and companion PORTOVENT® duct: Product Information • Accessories and Installation • Technical Data • Application Data.

THE FLEXAUST COMPANY

Dept. NE 1, 100 Park Avenue, New York 17, New York

Distributors in Principal Cities

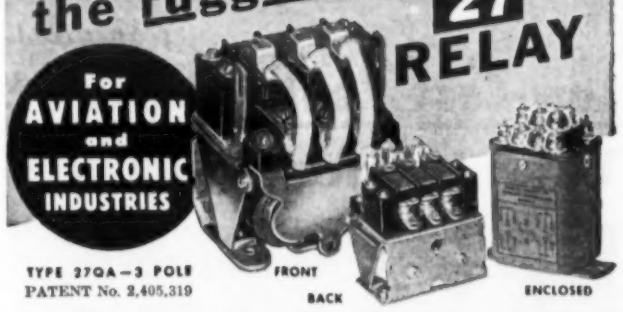
FLEXAUST® PORTOVENT® BLOFLEX® *Trade-mark

▲ For more details circle NED-858 A5 on enclosed inquiry slip ▲

Where SHOCK *and* VIBRATION *are a Problem . . .*

ENGINEERS CHOOSE the rugged Phil-trol 27 RELAY

For AVIATION and ELECTRONIC INDUSTRIES



TYPE 27QA—3 POLE
PATENT No. 2,405,319

■ Proved performance of Phil-trol 27 Relays in many vitally important applications has built great demand for this sturdy, sensitive and highly efficient relay. For instance, they are used for: propeller pitch control . . . cabin pressure and temperature control . . . guided missiles . . . computers . . . communication equipment . . . and many other electronic devices.

Phil-trol 27 Relays have unusual features like two-coil construction, which allows greater operating force for a given power input, and also completely eliminates magnetizing force losses at the armature hinge. The rigid frame and balanced armature design provides stability under conditions of high acceleration, severe vibration or shock.

For complete details on all of the many Phil-trol Relays available, write for the new Catalog.

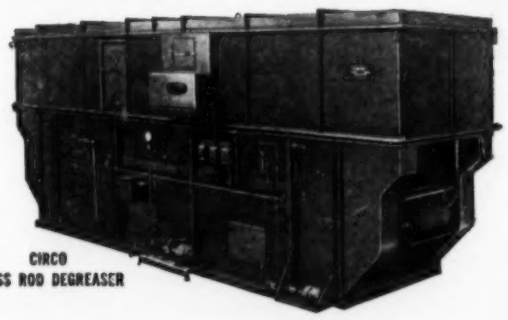
Phil-trol Type 27 Relays are available in 1, 2, 3, 4 or 5 pole, single or double throw. Operating voltage up to 230 D.C., resistance up to 13,400 ohms, minimum operating current is .001 amps. Available enclosed in dust cover or hermetically sealed.

Phil-trol IS THE REGISTERED TRADEMARK OF PHILLIPS CONTROL CORP. Dept. NED JOLIET, ILLINOIS

A THOR CORPORATION SUBSIDIARY OFFICES IN ALL PRINCIPAL CITIES

▲ For more details circle NED-859 A5 on enclosed inquiry slip ▲

Circo Vapor Degreasers use 30% less solvent



CIRCO CROSS ROD DEGREASER

New, modern Circo vapor degreasers — whether large or small — are engineered to save on solvent consumption. Construction features like balanced condensing coils, leak-proof pumps and dual vapor-level control are today saving companies 30% and often more in solvent use. Circo degreasers perform faster, save precious man-hours through engineering designs developed through 30 years experience in vapor degreasing.

Circo Introduces Ultrasonic Cleaning

Write for details on the most modern, talked about metal cleaning development of the century—the Circosonic degreaser that cleans small metal parts by the power of sound.

Send for Circo's comprehensive 32-page Manual on Vapor Degreasing. No Obligation.

SINCE CIRCO 1923

EQUIPMENT COMPANY

126 Central Avenue, Clark (Rahway), New Jersey Offices in Principal Cities

PER-SOLV (Perchlorethylene) CIRCO-SOLV (Trichlorethylene)

Vapor Degreasers • Metal Parts Washers • Dryers • Solvent Recovery Stills

▲ For more details circle NED-860 A5 on enclosed inquiry slip ▲

DRIV-LOK STUDS

Save 60% Fastening Time!

- HOLD PERMANENTLY
- DISASSEMBLED EASILY WITHOUT DAMAGE TO COMPONENTS

Driv-Lok Studs save time and reduce costs in fastening name plates, covers, brackets, panels, etc, to heavier sections and for countless other applications involving light-to-heavy member fastening. Once installed, Driv-Lok Studs will not vibrate loose or fall out—yet they can be easily removed without damage to components. Made in 3 head styles. Write for illustrated catalog sheet, prices and samples.

Quick, simple insertion . . . Drill Hole and Drive Stud with a single blow.

TYPICAL APPLICATIONS

Attaching name plates or instruction panels

Fastening spring assemblies or control arms.

Widely used for fastening brackets.

Securing semi-permanent covers and closure plates.

3 HEAD STYLES

Round (standard) Flat (to order) Countersunk (to order)

DRIV-LOK PIN COMPANY
717 Chauncey St. • Sycamore, Ill.

▲ For more details circle NED-861 A5 on enclosed inquiry slip ▲

Here's How

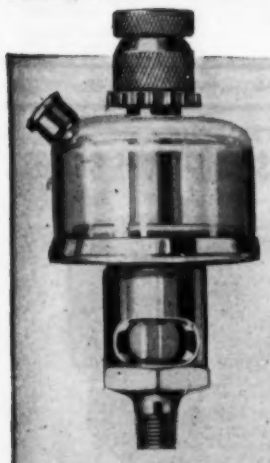
GITS

Provides

Low-Cost Replacement Of YOUR Lubricating Devices

OIL HOLE COVERS

This model is designed to fit into a simple drilled hole. Ideal for use on small motors, generators, starters and light machinery—for dependable oil hole protection at moderate cost. Larger sizes frequently used as filler caps on tanks or reservoirs. Style R—No. 305.



SIGHT GRAVITY FEED OILERS

Rate of oil flow regulated by needle valve, directly observed through sight glass in stem. Shut-off knob does not affect needle valve adjustment. Visible oil supply. Non-breakable. Tops in convenience and dependability, at low cost. Style NFU—No. 3602-A.

Too much machine "down-time"? Too much time wasted in servicing your machinery? Perhaps some old, worn lubricating devices need replacement. Maybe a different, more modern device will do the job more efficiently. Whenever you replace, specify GITS Lubricating Devices—the widest selection available anywhere, right in stock. The items pictured above are only a few of our many thousands of lubricating devices. Send NOW for your free Catalog.

GITS BROS. MFG. CO.
The Standard For Industry For Almost Half A Century
1833 South Kilbourn Avenue
Chicago 23, Illinois

▲ For more details circle NED-862 A5 on enclosed inquiry slip ▲

New Literature & Catalogs

General Purpose Fans

New York Blower Co.—Portable, self-contained general purpose fans of medium capacities for ventilating and industrial applications are described and specified in 12-page bulletin 545. Junior fans with forward curved wheels in capacities from 160 to 4100 cfm and general purpose fans in capacities from 1520 to 18,840 cfm are featured. Condensed capacities on all sizes are tabulated.

▲ For more details circle NED-863 A5 on enclosed inquiry slip ▲

Precision Lathes & Drill Presses

Louis Levin & Son, Inc.—36-page catalog M provides descriptive and pictorial treatment of precision lathes for second operations, manufacturing, tool making, instrument work and watchmaking; micro-drill presses for very small hole drilling; micro-drills, and watchmakers' tools. Lathes are designed for work which is too small for usual engine or toolmaker's lathe.

▲ For more details circle NED-864 A5 on enclosed inquiry slip ▲

Bending Blocks, Welding Platens

Acorn Iron & Supply Co.—Information relative to company bending blocks and welding platens is supplied in 50th Anniversary bulletin. Blocks and platens measure 5 x 5 ft x 5½ in. thick and have 289 clamping or spacing holes. Single and multiple stands to hold any number of blocks are described also.

▲ For more details circle NED-865 A5 on enclosed inquiry slip ▲

Self-Lubricating Products

Wakefield Bearing Corp.—Woodex oil-impregnated maple, Graphex graphite-impregnated sintered material and Coprex bronze sintered material without graphite, together with powdered metal products and brass are discussed in 44-page illustrated catalog and technical manual. Breakdown of components and sizes, lists of applications, properties tables and technical data are included.

▲ For more details circle NED-866 A5 on enclosed inquiry slip ▲

Stainless Tubing & Pipe

Carpenter Steel Co., Alloy Tube Div.—How to control corrosion with stainless tubing and pipe is subject treated in 28-page catalog T.D. 113. Booklet, illustrated with parts and applications photos, contains corrosion resistance tables, charts, field reports from users, detailed test results and similar engineering information.

▲ For more details circle NED-867 A5 on enclosed inquiry slip ▲

Split Ball Bearings

Split Ballbearing Corp.—Load and speed ratings as well as complete application data on single and double row split ball bearings are contained in 24-page guide book No. 54. All design data are presented in easy-to-use form. Both the inner and outer races of these precision bearings are split or fractured for ease of application.

▲ For more details circle NED-868 A5 on enclosed inquiry slip ▲

Hoists

Ingersoll-Rand Co.—Air and electric hoists for the handling of bulk materials of all types are described in 44-page illustrated catalog 5300-A. Single, double and triple construction hoists for lifting, pulling, loading and scraping are covered. Sizes and types are available for every need.

▲ For more details circle NED-869 A5 on enclosed inquiry slip ▲

Slitting Guidance

Ohio Knife Co.—Offered as a basic guide for inexperienced operators, 28-page illustrated manual covers descriptions of equipment, set-up procedures and maintenance involved in slitting and cutting operations. Basic techniques; function of slitter, pay-off reel and recoiler; scrap handling and cutting equipment; and other factors involved in production slitting of rolled stock are discussed.

▲ For more details circle NED-870 A5 on enclosed inquiry slip ▲

Pipe Welding Process

Arcos Corp.—The EB Weld Insert process permits deposition of a root pass which produces a smooth and uniform weld surface even though the actual welding is done on one side only. This process and the insert used are suitable for the butt welding of stainless and alloy steel pipe, both seamless and welded. Full details are given in 10-page illustrated bulletin.

▲ For more details circle NED-871 A5 on enclosed inquiry slip ▲

TAKES THE BREAKS OUT OF VIBRATING LINES

PENFLEXWELD
Corrugated . . . Flexible . . . Jointless Tubing

HERE'S A JOB just "made" for Penflexweld: the steam lines of a paper laminating machine. Steam pressure —100 psi . . . machine movement—¼" constantly . . . vibration—terrific. The Penflex Engineer recommended braided Penflexweld Tubing with Metseal couplings.

Penflexweld, the corrugated, all-metal welded tubing is flexible . . . resists bursting, crushing, breaking . . . is heat and flame-resistant . . . is "soap proof" . . . absorbs vibration. Have you a job for it?

Send today for the new illustrated data book on "Flexineering."

Pennsylvania Flexible Metallic Tubing Co., Inc.
7208 Powers Lane, Phila. 42, Pa.

PENFLEX
HEART OF INDUSTRY'S LIFE LINES

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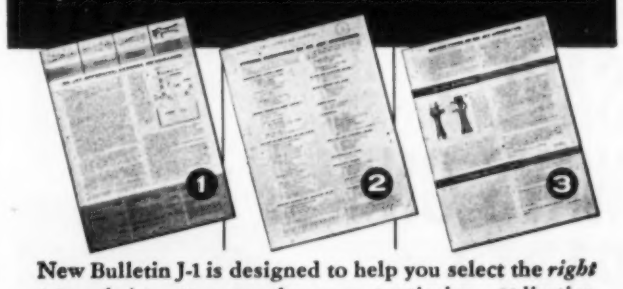
HERE'S VALUABLE INFORMATION ON JET APPARATUS AND APPLICATIONS



New Bulletin J-1 is designed to help you select the *right type of jet apparatus for your particular application.*

1 It includes basic information on the jet principle and jet apparatus terminology, construction, operation, and specific advantages.

2 Typical functions performed by jet apparatus are outlined, types best suited for each function identified.

3 Each type of apparatus described. Individual bulletins giving complete data are listed and return cards for requesting them provided.

BULLETIN J-1 IS OFFERED FREE AS A SERVICE TO INDUSTRY. TECHNICAL LIBRARIES AND SCHOOLS, AS WELL AS INDUSTRIALS, ARE INVITED TO WRITE TO:

SCHUTTE AND KOERTING CO.
2227 State Road, Cornwells Heights, Bucks County, Pa.

▲ For more details circle NED-873 A5 on enclosed inquiry slip ▲

WINTER!

Keep Production Moving with

WING DOOR HEATERS

Cold blasts from open doors are stopped in their tracks by Wing Door Heaters, which go into action automatically when the door is opened. The high velocity curtain of warm air keeps working areas comfortable, preventing the chilly drafts from entering. Workers are healthier, happier, keep right on working when doors are open. Learn how easily Wing Door Heaters can be installed in your plant. Write today for a copy of Bulletin DH-1.

L. J. Wing Mfg. Co. 165 Vreeland Mills Rd., Linden, N.J.

▲ For more details circle NED-874 A5 on enclosed inquiry slip ▲

PROVE TO YOURSELF!

Speed Production
Cut Costs

We GUARANTEE *faster* and *easier* assembly of open-type retaining rings . . . and less ring loss . . . with Industrial STACKED Retaining Rings. No more fumbling with tangled unstacked rings.

Try without risk. Full refund if Industrial's one-at-a-time modern dispensing does not reduce production costs. Industrial's specially designed base and tool are free with initial order. *Send today for new illustrated literature.*

Originators of Modern Dispensing

INDUSTRIAL RETAINING RING CO.
8 WEST SIDNEY AVENUE
MOUNT VERNON 4, NEW YORK

For more details circle NED-875 A5 on enclosed inquiry slip

Ceilcrete

FOR FLOORS, TANKS AND TRENCHES

A NEW ACIDPROOF COATING FOR CONCRETE

CEILCRETE surfacing provides the same protection as more costly acidproof brick in most applications. It hardens to a stone-like surface which withstands trucking, foot traffic and erosion from hot solutions and steam. CEILCRETE floors have four times the load carrying strength of ordinary concrete.

CEILCRETE is easily applied by troweling to all types of concrete surfaces: flooring . . pipe, tank and trench lining . . . cement block . . . walls . . . pump bases . . . waste disposal systems.

Available as materials or a complete job on contract basis.

- ACIDPROOF
- ALKALIPROOF
- SOLVENTPROOF
- HIGH IMPACT STRENGTH
- ABRASION RESISTANT
- EROSION RESISTANT
- NONSPARKING
- NONSLIP
- ADDS NO WEIGHT

1860-CC

Write today for illustrated Bulletin 110

THE CEILCOTE CO.
CORROSION PROOF MATERIAL AND CONSTRUCTION
4838 Ridge Road, Cleveland, Ohio

For more details circle NED-876 A5 on enclosed inquiry slip

Maintain Floors With Greatest of Ease
USE NEW

UNICO FLOOR MACHINES

The new easy to use Unico floor machines are packed with features that insure top efficiency, top value, lower operating costs. Unequalled for scrubbing all types of floors sparkling clean. Any one can do an expert job. Quickly convertible for all wet scrubbing operations. Shampoo rugs and carpets right on the floor. Interchangeable attachments permit waxing, polishing, sanding, buffing, steel-wooling, all with the same machine. Supplied in 12", 13", 15", 17" and 20" brush sizes. Powerful vacuum equipment for wet and dry pick-up also available. Send for details now!

UNITED FLOOR MACHINE CO., Inc.
7719 South Chicago Ave., Chicago 19, Illinois

For more details circle NED-877 A5 on enclosed inquiry slip

New Processes & Materials

RUPTUREPROOF GASKET
does not restrict flow in pipe

Danger of gasket rupture at high temperature due to entrapped air between insert and envelope is eliminated by design of Free-Flow Teflon gasket. Name is derived from fact that construction does not extend beyond ID of pipe, restrict flow or cause turbulence in the line. Envelope is made of chemically inert Teflon, adapting the gasket to all known corrosive services, plus varied temperature conditions from −100 to 482° F, depending upon insert material. Wide variety of shapes and sizes for diverse applications, including glass-lined, porcelain and pyrex equipment, is available. Made by **Crane Packing Co.**, Dept. NDC, 1800 Cuyler Ave., Chicago 13, Ill.

For more details circle NED-878 A5 on enclosed inquiry slip

HARD TOP DECALS
applicable to any surface

Practically scratchproof, type of hard top decalcomania is offered for industrial applications where rough usage is indicated. Decals will adhere to almost any painted surface, whether smooth or crinkled, pulling down into cervices or rough finishes to become an integral part of the surface to which applied. Their hard surface finish withstands abrasion and marring. Made by **Palm, Fechteler & Co.**, 99 Maple St., Weehawken, N. J.

For more details circle NED-879 A5 on enclosed inquiry slip

PLASTIC PIPE COVERING
simply zips on and locks in place

Prefabricated polyvinyl chloride acetate pipe covering zips on to protect pipe insulation against weather, abrasion, chemicals and mildew. Protektinsul covering is furnished to exact required size and locks in place with integral polyvinyl closure that assures an air, water and vapor-tight longitudinal joint. It can be used indoors, outdoors or underground and is available in colors. Made by **Miracle Adhesives Corp.**, Dept. W-799, 214 E. 53rd St., New York 22, N. Y.

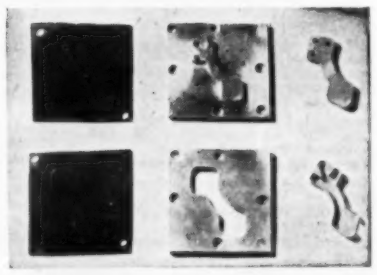
For more details circle NED-880 A5 on enclosed inquiry slip

LOW-FRICTION TREATMENT
for natural, synthetic rubber parts

Life of O-rings and other parts made of natural, synthetic and silicone rubber parts can be extended by Gorlube low friction treatment. Depending on the function and the part, the Gorlube treatment is given either by impregnation or coating. Extension of life where minimum wear is important is claimed on the basis of laboratory tests and actual applications. Developed by **Goshen Rubber Co.**, Dept. NED-1, Goshen, Ind.

For more details circle NED-881 A5 on enclosed inquiry slip

PLASTIC MOLDING PROCESS
for economical short run work

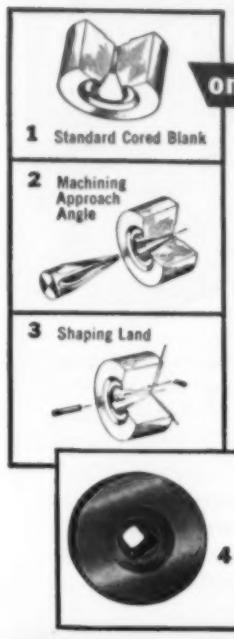


Parts can be produced from any material that can be transfer molded by the Economold short run plastic molding process. Molds are prepared in plate form, machined from soft metals. Process is adaptable for molding glass reinforced polyester resin compositions for resultant high strength, high impact and high temperature resistant parts or components. Special holding fixtures and press equipment make it possible to inject mold charge at high pressures. Developed by **Douglas Engineering Co.**, 22 Taylortown Rd., Montville, N. J.

For more details circle NED-882 A5 on enclosed inquiry slip

RAYTHEON

ultrasonic machining SAVES up to $240
on this Carbide Drawing Die



Only two quick operations from cored blank to finished die . . . using simple, low cost tools. Cost per die cut from $300 to under $60 . . . enough to pay for the equipment in 10 months on just these dies alone—with savings on other dies as a big bonus.

These are the benefits a manufacturer of ESS-shaped trolley wire obtained with the new Raytheon Ultrasonic Machine Tool. Learn how this new abrasive machining process will save time and money for you in forming, grinding, slicing, trepanning or cutting shaped holes in hard or brittle materials. Write for complete information. Address Dept. 6120-NE

RAYTHEON MANUFACTURING CO.
Equipment Marketing Division
WALTHAM 54, MASSACHUSETTS

For more details circle NED-883 A5 on enclosed inquiry slip

LAWLOR MOP WRINGERS

FOR EASIER MOPPING GET A LAWLOR NO. 2

EASIEST
turning wringer made: there are bearings at ends of rollers.

EASY
to bring rolls together: foot lever is perfectly balanced.

Copied but never Duplicated!

EASY
to move wringer: self-adjusting front casters raise metal feet from floor when you're ready to go.

The **LAWLOR No. 2** accommodates any standard round, galvanized pail up to 16-quart capacity. Net weight of wringer—23 pounds.

LAWLOR No. 6 TWIN is like the No. 2 Wringer in general construction, but accommodates two pails.

Write for Catalog of Mop Wringers, Tanks, Cleaning Equipment for every kind and size floor.

S. C. LAWLOR CO.
Quality Floor Equipment for 50 Years
131 N. ABERDEEN ST. CHICAGO 7, ILL.

For more details circle NED-884 A5 on enclosed inquiry slip

In 1 minute

The Verifax Copier, Kodak's sensational new office aid, gives you—

3 copies
of a letter, office record, news clipping or other item. Your copies will be dry, photo-exact . . . can be made even under fluorescent lighting by anyone.

only 4¢ apiece

. . . a surprisingly low price. *And here's the secret:* a unique Kodak development lets you get 3 or more copies from just *one* sheet of Matrix Paper. And you expose the document you're copying *only once.*

You should see a demonstration of this *completely different* copier in your office soon. What you'll save on *re-typing alone* quickly covers its $240 cost. Write for free Verifax folder and names of near-by dealers.

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.
Price quoted is subject to change without notice.

Kodak

For more details circle NED-885 A5 on enclosed inquiry slip

A New TWIST in Carbide

WENDT-SONIS Shear-carb

Now you can get standard end and shell mills with the advantages of carbide . . . plus the correct tooth design — a true helix.

SMOOTHER FINISH because the helical tooth maintains a constant cutting relation with the work piece. Chip formation is uniform at all times.

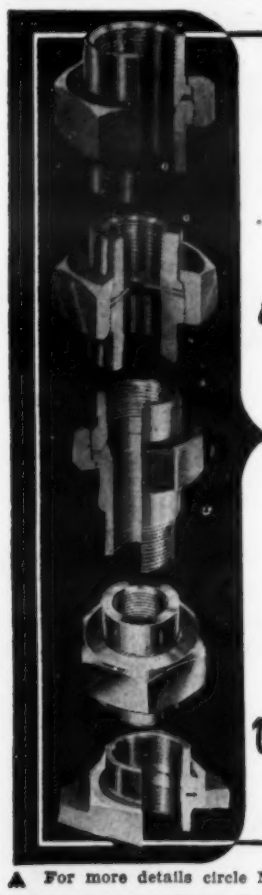
2 TO 3 TIMES LONGER TOOL LIFE because tool shock is greatly reduced when Shear-Carb teeth engage the work.

APPROXIMATELY 25% LESS HORSEPOWER because of the shear cutting action of each helical tooth.

WENDT SONIS COMPANY

Write Wendt-Sonis Co. Dept. NE155, Hannibal, Mo. for literature on new Shear-Carb Mills

▲ For more details circle NED-886 A5 on enclosed inquiry slip ▲



A TYPE FOR EVERY USE!

Catawissa PERFECT SEAL Unions

for all temperatures for all pressures!

Catawissa Unions are HOT FORGED from solid rectangular steel bars to give sure-fire piping dependability! Exclusive Ball-to-Angle seat design gives A PERFECT SEAL EVEN WITH PIPE NOT IN ALIGNMENT!

There's a Catawissa Union for every use, temperature and pressure . . . Standard and Double Extra Heavy; Orifice; Male & Female; Full Stainless, Full Alloy; Lug Nut. Choice of seats and socket weld or screwed ends.

Write for Catalog

STOCKED BY LEADING INDUSTRIAL DISTRIBUTORS

CATAWISSA VALVE & FITTINGS CO.
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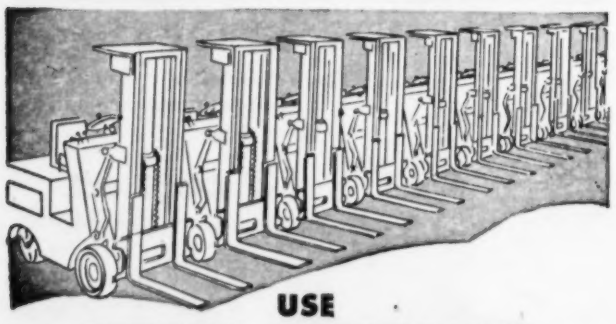

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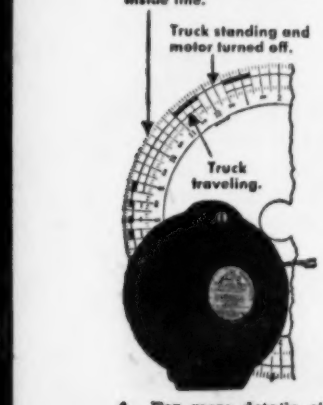

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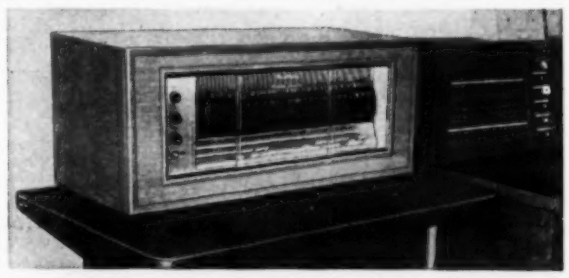

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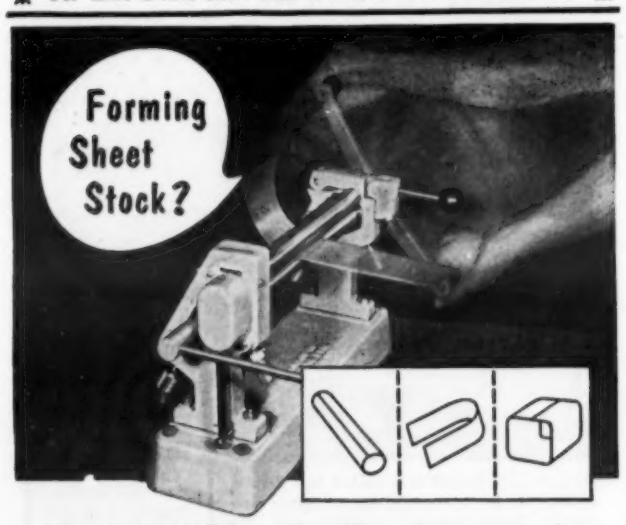

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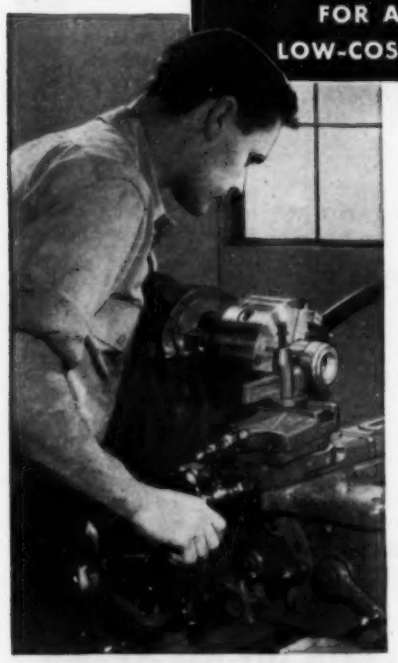

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Handling With Straddle Carriers

Clark Equipment Co., Industrial Truck Div.—"The One-Truck Fleet" is 16-page illustrated catalog which depicts the many uses of Ross straddle carriers in all types of plants. Operated by one man, this machine loads in 5 seconds, is made in capacities up to 25 tons, travels over the road or in plant areas at speeds up to 56 mph and unloads itself in 3 seconds. Case histories cite applications of straddle carriers in major industries.

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R & L Tools—32-page illustrated catalog on the R & L line includes details of turning tools, carbide or roller backrests, releasing or nonreleasing tap and die holders, universal tool post, cut-off blade holders, recessing tool, revolving stock stop and floating drill holder. Data on proper use of tools is presented.

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Franklin Balmar Corp., N. A. Strand Div.—Single-speed direct-drive, multiple-speed countershaft drive and multiple-speed gear-drive Strandflex flexible shaft machines for all types of grinding and finishing operations are described in illustrated catalog C-210. Useful tables deal with grinding wheels and operating speeds.

▲ For more details circle NED-900 A5 on enclosed inquiry slip ▲

Electric Hoists

Yale & Towne Mfg. Co.—16-page illustrated bulletin P-495-A gives details of the Cable King line of wire rope electric hoists in capacities from ¼ to 15 tons. Hoists have air-cooled motor and load brakes to perform under heavy duty work cycles.

▲ For more details circle NED-901 A5 on enclosed inquiry slip ▲

Industrial Awards & Incentives

Williams Jewelry & Mfg. Co.—Ideas for furthering safety programs in plant or office are found in 36-page 1955 industrial awards and incentives catalog. It features the Green-Cross plaque.

▲ For more details circle NED-902 A5 on enclosed inquiry slip ▲

Industrial Gas Equipment

C. M. Kemp Mfg. Co.—20-page illustrated bulletin G-10, "Kemp Case Histories," features installations of industrial gas equipment at 17 major companies. Immersion heaters and pots for melting various metals, with capacities up to 100 tons; Dynamic dryers for air, gases and liquids with 1 to 20,000 cfm capacities; and virtually maintenance-free inert gas generators are described and illustrated in these case histories.

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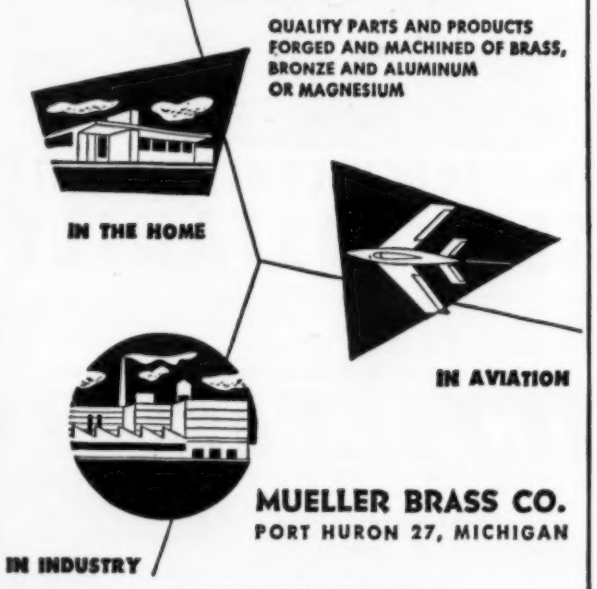

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for bundling, sealing and closing

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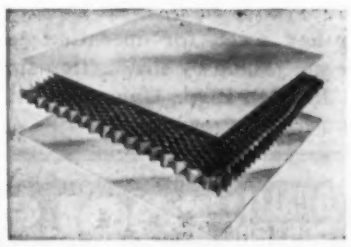
strong panels have honeycomb filler



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Fuel Waste		Water Waste	Total Waste
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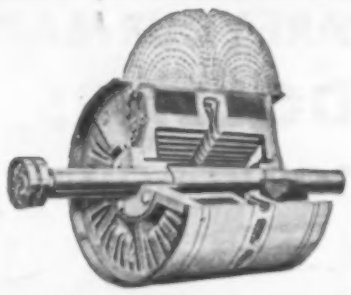

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This soldering paste clings to any object, and is easy to work in either a horizontal or vertical position. Available in 2 lb. cans at $4.00 each (10% discount on 6 can lots) fob Farrelloy Co., 1246 N. 26th St., Phila. 21, Pa.

Samples not available. Hy-Tin is guaranteed and may be returned for credit if not satisfactory. *Advt.*

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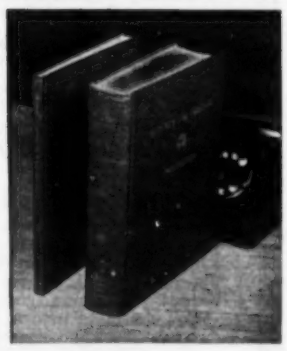

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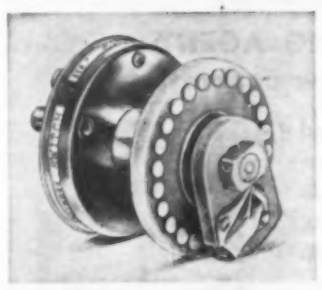
THERMOCOUPLE SWITCHES

feature low contact resistance



Basic requirement of a precision thermocouple transfer switch for laboratory or production testing is fulfilled by line of switches with contact resistance less than 0.004 - ohm. Resistance will not vary more than ±0.0003-ohm over the life of the unit. Switches are available in wide variety of combinations of poles per deck, number of decks and positions per deck. Silver alloy contacts, slip rings and rotor arms are used. Made by **Daven Co.**, Dept. RC, 191 Central Ave., Newark 4, N. J.

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BIN SCOOP HOPPER

attachment fits front of Tote Bin

Versatility of all-aluminum Tote Bin bulk material handling bin is increased with this hand scoop attachment hopper. Accessory is useful where customer wishes to measure out small quantities of material. Hopper is aluminum same as bin. Made by **Tote System, Inc.**, 710 S. Seventh St., Beatrice, Nebr.

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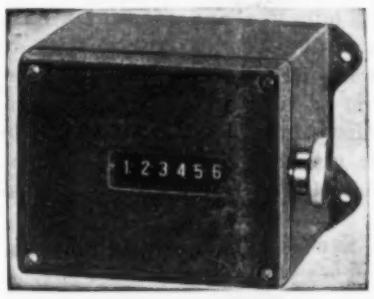
ELECTRIC COUNTER

heater prevents condensation



Built - in heating element prevents condensation and corrosion in this enclosed electric counter for use where dampness and temperature variation exist. It has cast aluminum case with gasket seal and cement-sealed plastic windows. Small heating element maintains temperature of about 125° F within the enclosure. Counter is made with four or six digits, with knob or key reset, for operation on any voltage to 230, ac or dc. Made by **Production Instrument Co.**, 700-12 W. Jackson Blvd., Chicago 6, Ill.

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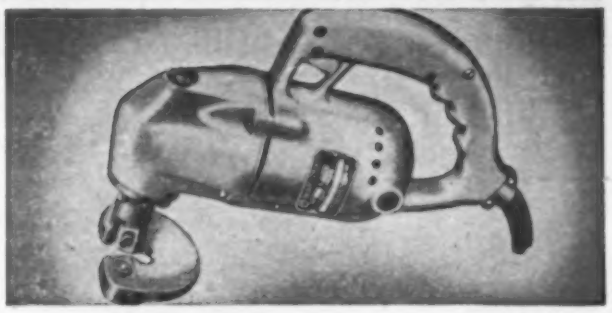

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Source: THE ALVEY-FERGUSON CO.
30 Disney St., Cincinnati 9, Ohio

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For the latest information on modern, efficient handling methods, write: The Alvey-Ferguson Company, 30 Disney Street, Cincinnati 9, Ohio.

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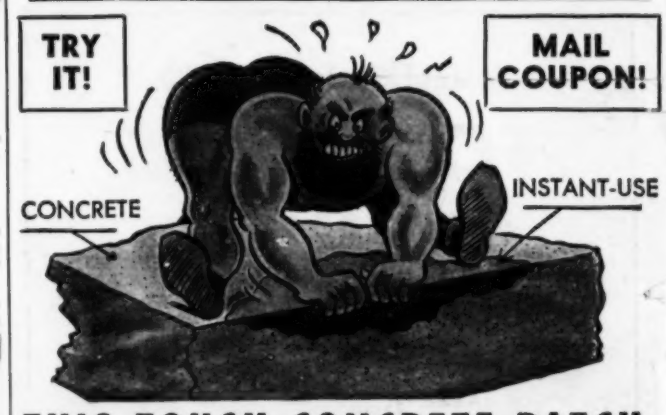

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